



# CTR

COMMUNITY TELEVISION REVIEW

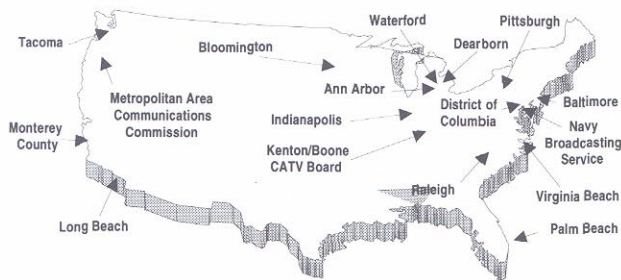
A Publication of the  
Alliance for Community Media  
Volume 16, No. 6 • \$4

## The Community Television Worker's Handbook to Cyberspace



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## Special Interest Groups

Special Interest Groups (SIGs) are organized by members sharing a common interest and desire to establish a network to communicate within and outside the Alliance.

### Educational Access

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LISD-TV  
1323 East 24th Street  
Lubbock, TX 79404  
806/766-1212 806/766-1312 fax

### Training

Chuck Peterson  
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50 Library Plaza NE  
Grand Rapids, MI 49503  
616/459-4788 616/459-3970 fax

### Government Access

Robert Hardy  
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410 E. Washington Street  
Iowa City, IA 52240  
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### Seniors

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### Small Access Centers

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### Independent Producers

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## Accessing the Alliance

**Jobline.** For access jobs across America, call 202/393-2653.

**Bulletin Board.** To connect, call 217/359-9118, and set your computer's modem to 300, 1200 or 2400 baud, 8 bits, 1 stop bit, no parity.

**National Office.** Call 202/393-2650, fax 202/393-2653, or write the Alliance at 666 11th St. NW, Suite 806, Washington, DC 20001-4542.

**Address Changes.** Please contact the national office at the address above for membership or CTR subscription address changes.

**Community Television Review.** Advertising and editorial, call 616/454-6663, fax 616/454-6698, or write CTR, 15 Ionia SW, Suite 201, Grand Rapids, MI 49503-4113.



**Access Advocate**  
**Roxie Cole**  
**Seriously Ill**

Roxie Cole, former executive director of Access-Dayton (OH), former board member of the Alliance for Community Media and life member, is seriously ill.

Roxie suffers from a rare bone cancer, and her allergies to conventional medications has forced doctors to experiment to ease her pain while she undergoes daily radiation treatments.

Her prognosis is not good, but Roxie fights with the same fierce determination that marked her passionate efforts in the cause of community media.

To contact her, write c/o her home address at 1145 Bishop, Apt. F, West Carrollton, OH 45449-2073.

**Community Media**  
**Resource Directory**

The Buske Group has been awarded the contract for the new *Community Media Resource Directory*, an updated and restructured version of the Alliance's popular Cable Programming Resource Directory, last published in 1987.

The directory, made possible by a grant from the MacArthur Foundation, will offer extensive reference for community media users, access centers, independent producers, nonprofits, telecommunications regulators and policy makers. A significant aspect of the project will be the creation of an electronic database for retrieval and updating.

Publication is expected by this summer.

**Seeking Central**  
**American footage**

*Central America Update*, a half-hour, monthly news and public affairs program shown on public access stations across the country, is looking for footage or produced pieces (from one to 30 minutes) on Central America, Cuba and Haiti – including information on current economic and political situations, free trade, women's organizing, alternative economic development, and other.

The program is especially look-

ing for anyone shooting Salvadoran elections, return of Guatemalan refugees from Mexico, or anything in Haiti. Also looking for someone in Washington, DC who could tape interviews for the show.

There are no funds for payment, but costs of tape and mailing are covered. For more information, contact Carol Yourman, 617/492-8719, 362 Washington St., Cambridge, MA 02139.

**Return those Surveys**

Response has been dismal to the CTR reader survey published in the last issue. Alliance members are urged to respond as soon as they can. It'll take only about five minutes of your time. Your input will be invaluable as the Editorial Board charts the future of CTR, which becomes *Community Media Review* with the next issue. Don't delay, return them today. Thanks.

**Up & Coming**

**January 21.** Deadline for entries. *6th Annual United States Super 8 Film/Video Festival*. Any genre encouraged – animation, documentary, experimental, fiction, personal, etc. – but work must originate on Super 8mm film or 8mm video. For more information, contact United States Super 8 Film/Video Festival, Rutgers Film Co-op,

Program in Cinema Studies/Rutgers University, 43 Mine St., New Brunswick, New Jersey 08903.

**January 27-30.** Alliance for Community Media National Board Meeting. Chicago, IL. Contact the national office at 202/393-2650 for details.

**January 29-February 2.** National Federation of Community Broadcasters *1994 Annual Community Radio Conference*. Tampa, FL. For details, call 202/393-2355. e-mail [nfcb@cap.gwu](mailto:nfcb@cap.gwu).

**February 1.** Deadline for entries. *Retirement Research Foundation 1994 National Media Awards*, for films, videotapes, and television programs on aging. No entry fee, but must be produced in the US, broadcast or copy-righted in 1993, and not primarily promote an organization, institution or product. For details and entry forms, contact Ray Bradford, RRF National Media Awards, Center for New Television, 1440 N. Dayton, Chicago, IL 60622. Telephone 312/951-6868.

**March 4.** Deadline for entries. Alliance for Community Media's *1994 Hometown Video Festival*. America's oldest and largest video competition honoring the work of local cable program producers. Members should receive details via mail this month. Contact

Randy VanDalsen, c/o The Buske Group, 2015 J. St., Suite 28, Sacramento, CA 95814.

Telephone 916/441-6277.

**March 11-12.** Central States Regional Spring Conference. Emphasis on democratizing and managing media. Indianapolis, IN. Contact Norm Compton, Defiance (OH) Community Television, 419/784-3401, or John Knoxx at 317/327-4529.

**April 1.** Deadline for entries. EarthPeace International Film Festival. Documentaries, animation, short or feature length film or video addressing the categories of the Environment, War and Peace, and Justice and Human Rights. For details and entry forms, contact EarthPeace International Film Festival, Vermont World Peace Film Foundation, PO Box 531, Burlington, VT 05402-0531. Telephone 802/660-2600. Fax 802/658-3311.

**April 21-23.** Alliance for Community Media National Board Meeting, Washington, DC. Contact the national office at 202/393-2650 for details.

*Submission of upcoming events of general interest to all Alliance members are encouraged. Indicate title, organization, dates, location and contact numbers. Send at least two months prior to CTR, 15 Ionia SW, Suite 201, Grand Rapids, MI 49503-4113. Telephone 616/454-6663. Fax 616/454-6698.*

**Charter to Hawaii Conference Planned by Midwest Region**

A charter flight originating from Minneapolis/St. Paul, MN to the 1994 *Alliance for Community Media International Conference* in Hawaii is being coordinated by Kathleen Greenwood, vice-chair of the Midwest Region.

To negotiate the best possible rates, Kathleen needs to know of your interest in this charter flight. A seven day stay for the week of July 18 is being planned. Once a flight has been established, final confirmation will be required of each party. In addition to obtaining affordable cost flights, low cost rates for lodging are being negotiated by the Alliance board.

To have your name added to the "interested" list, please send your name, organization, title, address, phone and fax to: Kathleen Greenwood, Government Access Coordinator, South Washington County Cable Communications Commission, 445 Broadway Ave., St. Paul Park, MN 55071. Telephone 612/458-9241. Fax 612/459-6520.

Once a flight has been established, you will be notified in order for you to book your seat. Other regions are encouraged to establish charter flights from a hub city in their region, or arrange transportation to the Minneapolis/St. Paul charter flight.





## FROM THE CHAIR

### QUICK!.Net

By Anthony Riddle

A friend of mine left me voice-mail the other day: "Hey, call back quick! Just saw the future. Gotta hip you before it changes again."

**Access Assets.** Every access center has an asset nobody else has. We have big, fat channels going to most homes in most communities in the country. Alliance members operate in more communities than TCI or Southern Bell or any of them.

What's the value in dollars? The size of your one channel going into the home is larger than the twisted-pair that US West is currently using to offer video/info services in Omaha, Nebraska. They are testing the legal basis of the system which makes your access center possible: Going head-to-head with Cox Cable with no local franchise agreement. They "don't need no stinkin' franchise," they say, because they're coming in under the Telco Entry portions of the 1992 Act. That's a lot of commotion to push down a little wire.

**What We're Doing Now.** MTN is setting up an Internet node for Minneapolis. Along with our training in video and free channel time, we will soon offer connection to the Internet for people and organizations not lucky enough to afford commercial connections and not close enough to universities to get them free. We've been awarded start-up funds from MacArthur Foundation along with expertise and a computer from Cray Research.

I have never seen a better community organizing tool than the

Net. Its brought us into contact with a wider variety of organizations now than I ever could have imagined. People want and need this tool, but it is precisely access which has been limited. We will provide phone numbers for people to connect through, or terminals spread around the city for those who can't afford them and training for all. We will provide routing for local computer communications.

**The Future.** That asset you have is very valuable to the BBS in your area. If we identify equipment which will allow them to connect to each other and to the Internet through you, you will have organized a neglected local virtual community holding assets which will benefit your access centers, your citizens and the Alliance. We need only one such hub site in every area code so all municipalities can be connected nationwide toll free.

By creating with these hybrid "local-area nets," we will be connecting, physically, all our members nationwide into a communications network dedicated to allowing free public communications to all. This would be wondrous enough if it was only text data.

But there is a scientist hunched over a computer in the dark somewhere, believe you me, crunching video small enough, fast enough, to run across the Internet.

*Anthony Riddle is chair of the Alliance for Community Media. He is executive director of the Minneapolis Television Network, 125 SE Main St., Minneapolis, MN 55414. Telephone 612/331-8576. Fax 612/331-8578. e-mail <mtn@MR.NET>.*

## FROM THE EXECUTIVE DIRECTOR

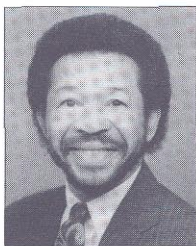
### Tool That I Am...

By T. Andrew Lewis

We are an organization of techno-users. Historically, our primary hardware of choice has been television production equipment and the microcomputer. Our network has been the 2,000 or so PEG access channels on cable television. Our highway has been literal—bicycling tapes via the most efficient and inexpensive carrier. Infrequently, we have soared in the rarefied air of satellite transmission.

And then, suddenly, telecommunications began its "evolution revolution." Connectivity, interconnectivity, cyberspace and platforms took on vital new meanings. So did this organization. We changed its name! The imperative of identifying, mastering and putting to community use these new media formats was realized.

The first question. . .How? What? Who? When? Why? Where? How do I, after seven years, finally log onto the Alliance supported BBS? What is a modem? Who controls the Internet? When should I purchase the hardware that I need? Why is this "information superhighway" (and the "National Communications Competition and Information Infrastructure Act of 1993" or H.R. 3636) such a big deal? And where can I find the answers to my



questions?

Here's one answer. You can begin to answer your questions right here. Lauren-Glenn Davitian has developed this issue of CTR as a nuts and bolts guide to taking those first steps into cyberspace.

The ability to connect and communicate with others across the country and around the world is a technological gift today and an imperative for the success of further democratization tomorrow. The ability to exchange information with colleagues on the Alliance BBS and other special interest bulletin boards is also vital. We must all work diligently to ensure the future capability of disseminating our video (as well as audio and textual) messages throughout the coming electronic superhighway. It will be the means of effective communications just as television has been over the past quarter century.

Beware, though. We must not forget that many traditionally denied access to the basic human rights here and around the world still do not have access to computers. And many don't trust technology and will refuse to be interconnected. So many others will have it refused to them due to the harsh reality of economics. It is imperative that we keep in mind that this emerging technology is not an end. Success is not achieved when many or even most are connected. It is a tool to be used for inclusion in pursuit of greater purposes. Success is measured, then, upon accom-

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## PUBLIC POLICY

By Alan Bushong

**Public Interest Groups Advocate Public Space on Information Superhighways.** Congressional staffs are once again drafting Telco entry legislation. In response, the Alliance and public policy consortium partners National Alliance of Media Arts and Culture (NAMAC) and the Association of Independent Video and Filmmakers (AIVF) are planning to meet in concert with the Washington D.C.-based Telecommunications Policy Roundtable. This grouping of public interest organizations, including the Alliance, has taken a leadership position in developing public interest principles for a national telecommunications system. Other roundtable members include: the Center for Media Education, the Roundtable convener; ACLU; People for the American Way; NAACP; the National Education Association; American Library Association; Media access Project (MAP); Benton Foundation; National Federation of Community Broadcasters; Corporation for Public Broadcasting; and Computer Professionals for Social Responsibility.

The roundtable's public interest principles are worthy of review. The first two in particular have formed the core of Alliance public policy work since 1976 and are the basis of the public policy coalition. The seven principles in summary are:

1. Universal Access – *All people should have affordable access to the information infrastructure.* Access to voice, video and data networks is fundamental to life, liberty and the pursuit of happiness in the Information Age. Information essential to fully participate in a democratic society should be provided free.

2. Freedom to Communicate – *The information infrastructure should enable all people to effectively exercise their fundamental right to communicate.* The design of the communications system should guarantee the right of every person to communicate easily, affordably and effectively.

3. Vital Civic Sector – *The information infrastructure must have a vital civic sector at its core.* For our democracy to flourish in the 21st Century, a vital civic sector must enable the meaningful participation of all segments of our pluralistic society.

4. Diverse and Competitive Marketplace – *The information infrastructure sound ensure competition among ideas and information providers.* To accomplish robust debate and a full range of viewpoints, individuals, non-profit organizations and for-profit organizations need ready access. Regulation must lower barriers for the small and prevent monopolization by the large. Communications company management at all levels needs representation of women, minorities and persons with disabilities.

continued next page

## INTERNATIONAL

By Nantz Rickard

**Somebody asked about the Video Olympiade.** . . and Alice, peering through the looking glass wondered out loud to herself, "Well, what really is the communications infrastructure anyway, if you know what I mean? Are public access users a part of it? How will it evolve? Will public access still be part of it? And what does the Video Olympiade have to do with any of it?"

The communications information infrastructure has many components and levels of operation. People who comprise the companies which provide hardware, software and services are one component. People who are "consumers" of these companies' goods and services are another. The information data (audio, video, text) which people generate are part, as are the policies which people make to regulate the flow of data and to apportion the spectrum of transmission opportunities. The transmission hardware itself is also a component.

So much of the discussion of the development of the communications infrastructure of the future centers on the hardware and policies, yet it is important to recognize that the greatest part of any communications infrastructure is actually people and how they're using the tools. Even the hardware, ultimately, is not some elemental resource that's been discovered and now we all have to decide how to best use it. It's designed by people with specific goals in mind. Raymond Loewy, a greatly respected pioneer and innovator of industrial design, would say that design must serve the user, but is suggested by the intended use. In particular, many of our communications systems are based on a centrally controlled model, like the hub of a wheel. Data

flow is generated from a central source and travels out to each station or person.

People in public access, here in the U.S. and all over the world, have spent a great deal of energy to work through a different model – many sources generate the information which is then communicated to many stations or individual. This model is more like a matrix, where any input can go out to any or all available outputs.

This matrix model more clearly parallels community structure itself – maybe even is an essential element in the constant formation and reformation of communities. Communities are formed by people coming together to act, often beyond geographical or geopolitical boundaries. Consequently, community structure is better defined as a fluid association of individuals rather than as some singular, static "group." Community is a changing scene, constantly remaking and redefining itself through the dynamic interaction of every member.

The matrix model of communication seems to serve certain aspects of community's structures and motivations that a centralized, information-feeder hub model cannot. Even though some particular forms of communication are better served by the hub model, the larger portion of people's communication needs require that the hardware infrastructure to accommodate each person as a producer of information and as a fully participating member in the networks of interaction which continually define and redefine our communities.

Two simple examples may help to illustrate this is all closer to home than it seems. First, take the history of television in the

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# If you haven't joined the Alliance for Community Media, here's how to become a member.

## MEMBERSHIP ENROLLMENT FORM

(Please check all that apply)

Yes, I want to join the Alliance for Community Media. I am a(n):

- ☐ Access Staff Member ☐ Access Board Member  
☐ Community Producer ☐ Cable Regulatory Staff or Board Member  
☐ Other \_\_\_\_\_

### ORGANIZATIONAL

- ☐ Over \$100,000 annual revenues \$275  
☐ \$10,000 to \$100,000 annual revenues \$175  
☐ Under \$10,000 annual revenues \$75

All organizational memberships expire on September 30th of each year. Join between April and September and pay half the annual rate.

### INDIVIDUAL

- ☐ Affiliated (available only if your organization is a member. Includes paid staff, volunteer producers, board members, or other unpaid individuals associated with a member organization)  
☐ Staff \$35 ☒ Volunteer \$25  
☐ At-Large (includes professional or volunteer individuals who are not associated with a member organization)  
☐ Advocate (volunteer) \$30 ☐ Professional (salaried) \$75  
☐ Patron \$120 ☐ Life \$1,000

All individual memberships expire one year from the last day of the month in which you join.

### SPECIAL CONTRIBUTION

I am including an additional amount to further support the activities of the Alliance and help broaden participation in the organization.

- ☐ \$10 ☐ \$15 ☐ \$25 ☐ \$40 ☐ \$50 ☐ \$ \_\_\_\_\_

### SUBSCRIPTION ONLY (not a membership)

- ☐ Community Television Review (6 issues) \$25  
 (Canada \$30, other non-U.S. \$35) CTR Subscriptions expire one year from the last day of the month in which you sign up.

TOTAL AMOUNT ENCLOSED \$ \_\_\_\_\_

### NAME AND ADDRESS (Please print)

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Contact person (organizational members only) \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_ Fax (\_\_\_\_) \_\_\_\_\_

Name of organization of affiliation (affiliated members only) \_\_\_\_\_

### TYPE OF ORGANIZATION

- ☐ Nonprofit ☐ Educational institution ☐ Library  
☐ Government ☐ Cable system ☐ Other for profit org.

### TYPE OF FACILITY (please check all that apply)

- ☐ Public access ☐ Education access ☐ Government access  
☐ Local origination ☐ Leased access ☐ Other

### DEMOGRAPHICS (individual members only)

This optional information will help us to better serve current and potential members.

- ☐ Black ☐ White ☐ Hispanic ☐ Asian or Pacific Islander  
☐ Native American ☐ Other ☐ Female ☐ Male

Mail check or money order payable to the Alliance for Community Media, 666 11th Street, N.W., Suite 806, Washington, D.C. 20001-4542.

## Public Policy

Continued from previous page

5. Equitable Workplace – *New technologies should be used to enhance the quality of the work experience.* Because the infrastructure will transform the nature of work, policies must improve rather than dehumanize work environments.

6. Privacy – *Privacy should be carefully protected and extended.* Collection of personal data should be kept to a minimum, consent should be required prior to sharing, and the right of inspection and correction should be provided.

7. Democratic Policymaking – *The public should be fully involved in policy making for the information infrastructure.* The public must be involved in all phases of infrastructure regulation. The public should be educated for an open debate on issues which will have a profound effect and may reshape democracy.

With the exception of points five and six, the Alliance, its members and constituent groups have a twenty year history of delivering these principles. The Alliance represents the wide range of organizations and individuals who use community media every day to build their communities into better places to live.

**Alliance Works with NATOA.** In response to mutual overtures, the Alliance and the National Association of Telecommunications Officers and Advisors (NATOA) are working together on language for Telco entry legislation. NATOA's recently-released platform includes strong statements supporting PEG and leased access. The NATOA platform advocates the opportunity for local communities, through multichannel video programming providers, whether cable or telephone, to provide:

1. PEG channels;
2. Operating and capital sup-

port of access facilities *separate from franchise fees;*

3. Liability protection for access entities, cities and cable operators who do not exercise editorial control on access channels;

4. Itemization of all programming costs, if PEG costs are itemized on the bill.

NATOA deserves a round of thanks for this progressive approach and is a welcome partner in developing legislation conducive to community use of media.

### The Alliance and communities: focusing on real issues.

When people are able to speak for themselves, to impact decisions which affect their lives and to participate in shaping the future, *the human condition improves.* When a democracy is truly participatory, we will discuss and resolve real issues, including:

➤ Making respect for human dignity *for all people* a fundamental part of all policy and education;

● Eliminating violence against women and people of a different color, religion, sexual orientation or ability;

● Reducing human consumption to preserve the environment and this planet;

➤ Valuing people for their efforts to build community instead of their ability to consume.

**The Alliance is your advocate.** The Alliance is your representative and advocate in Washington D.C. and will continue to work on your behalf to create and preserve an environment conducive to unfettered community use of telecommunications equipment and transmission systems. Alliance members and constituents standing shoulder to shoulder will succeed!

*Alan Bushong chairs the Alliance's Public Policy Committee. He is executive director of Capital Community Television, 585 Liberty St., Salem, OR 97308-2342. Telephone 503/588-2288. Fax 503/588-6055.*



# Community Access Television Workers Are Information Age Translators

By Lauren-Glenn Davitian, Guest Editor

Community access television workers have been organizing for more than 25 years to stake a claim on the television dial. During the past decade, that dial has transformed into an epic universe, promising at least 500 channels and a panoply of interactive services. Every day we hear more about the information highway and are told that we (public, educational and government access) are one part of what is now called cyberspace. But what part? And where is **cyberspace**? Does it have anything to do with the Internet? And how do we organize to stake a claim on this information highway?

Cable companies are converging rapidly with phone companies and satellite operations. Telephone companies are preparing to deliver video services into the 97 percent of the homes they serve in the United States. Cable – already designed to provide interactive services – is wired into 65 percent of the homes in the country. Every information and transmission company is preparing for more voice, data and video service than a consumer can possibly imagine.

Still, the “choice” promised by “de-regulation” of both the telephone and cable industry is not readily available. We see “competition” turning into the consolidation of media enterprise, quickly creating de facto monopolies lacking public service protections. The proposed Bell Atlantic / TCI merger shows that we may lose our claim for public access more quickly than we first feared.

Now more than ever, we must dedicate ourselves to universal service and the principles of access, affordability, privacy and interconnection of all carriers for the purpose of public access. Further:

- we must make sure that citizens are not shut off because they can't afford to be hooked up or buy basic services;

- we must make sure diverse voices are not shut out of the 500 channel promise;

- we must include the access interests of those people who do not have cable and who don't have telephones: because in a blink of the eye they will be one and the same – digital technology.

Building a road for access to cable television is the same as building an on-ramp to the information highway. As translators and trainers and users of portable video equipment, PEG workers are ideally suited for this job. But first we have to have a clear understanding of this fiction called cyberspace and develop our own navigational skills.

Once we make an effort to enlarge our world view and think strategically, we are able to defend ourselves as public service requirements – like PEG access – are threatened and eliminated. Recognize that we are no longer in the cable television business. The information highway is DIGITAL: voice, data and video all wrapped up as bits of information skidding across interconnected transmission networks built on fiber optics, coaxial cable, microwave, and computer switches. A lot of this “stuff” has been mak-

ing its way across the **Internet**, commonly considered to be the “network of networks” and worth our investigation and understanding. With a little curiosity and research we discover that, on the other side of the looking glass, there is a community access movement of **civic networks** that has been under construction for more than a decade.

This edition of *Community Television Review* is called *The Community Television Worker's Handbook to Cyberspace* so you can use it to understand and explain how public access ties into the “information highway” and how to “drive” around. We look closely at the Internet, one of the main transportation routes filled with scenic rest stops, because it is the likeliest point of departure you will find. You will also learn about civic networks, how to use them, and some ideas about how to tie civic networking into your community programming and organizing efforts.

This “Cyberspace Handbook” is meant to be a companion to CTR's December 1992 issue “Access and Emerging Technologies”, which provides a comprehensive (and still current, but unfortunately out of print) look at the major policy issues and initiatives that affect all PEG access workers. The “Handbook” includes information gathered almost exclusively from the Internet and from our colleagues from the “on-line community.” We relied heavily on **The Whole Internet Users Guide and Catalog**, which is an easy to use step-by-step guide to Internet navigating and should be relied on for more detailed instruction than we could fit in these pages. Many of the articles were downloaded from the **Communit** mailing list ([communit@uvmvm.uvm.edu](mailto:communit@uvmvm.uvm.edu)), which provides up-to-the-minute networking information and case studies about democracy and technology. Over the past 18 months, **The Center for Civic Networking** has played an active role in connecting community TV workers with the civic networkers, and many of the resources noted here have been provided by their members.

As cable melts into the digital highway, we must re-examine what public access means. We already know how to organize, but we need to learn how to read the road maps to cyberspace. Once we can navigate with confidence (and it takes a few months so be patient), we can begin the tricky job of answering all those questions people are already starting to ask and recruit them to build the “on ramps” with us.

*The Community Television Worker's Handbook to Cyberspace* is meant to get you started. Hopefully you will want to know more than we could fit in these pages and you will use the resources listed here to continue your navigation. We are, as always, interested in your comments so we can build on this first translation effort. Feel free to contact me at [cctv@emba.uvm.edu](mailto:cctv@emba.uvm.edu) and get ready to take the “on-line pledge”!

Lauren-Glenn Davitian is channel director of Channel 17, Town Meeting Television, CCTV, 294 North Winooski Ave, Burlington, VT, 05401. She is also chair of the Deep Dish TV Network. Telephone 802/862-3966. [cctv@emba.uvm.edu](mailto:cctv@emba.uvm.edu)

Part 1

Why Explore Cyberspace?



# Cyberspeak! *Know before you go. . .*

**bandwidth** • The width of an electrical transmission path or circuit, in terms of the range of frequencies it can pass, a measure of the volume of communications traffic that the channel can carry. Often referred to as a "pipe" carrying an information flow rather than water. The bigger the pipe, the greater the flow in a given time interval. Video requires a much bigger pipe than simple voice. Small pipes are referred to as "narrowband" while large pipes are referred to as "broadband." Information can be compressed, like dehydrating onions, to be transported in a less bulky state. Just add water. (See *compressed video*, *ISDN* and *narrowband*).

**basic service** • Basic service isn't what it used to be in the telephone business. In 1981, "basic telephone service" included a primary voice telephone set, inside wire, maintenance of customer premises wire and equipment, and local and long distance directory assistance service. Today these items are often "unbundled" and charged separately or not provided at all by the local phone company. It's time for the definition of basic service needs to be broadened again.

**BBS** • Electronic bulletin board. A personal computer connected to the telephone, providing a public forum for others to dial in and post items to various conferences of topical interest. BBS systems range from small personal computers operated for free by hobbyists, schools, libraries, non-profits and small businesses, to large commercial services. Municipalities are beginning to offer such services to their citizens. There are tens of thousands around the United States and the world. The applications are infinite and it is an industry experiencing rapid growth.

**broadband carriers** • High capacity transmission systems for many simultaneous voice telephone channels or one or more video channels. Such capacity can be provided by coaxial cables (such as cable TV), microwave radio systems (mountain top repeaters to remote areas), or fiber optics (which commonly connect telephone switching stations nowadays).

**Cable Act of 1984** • Cable Communications Policy Act of 1984. The Cable Act gives local franchising authorities (usually city government) the power to award one or more cable television franchises and collect a franchise fee not to exceed 5 percent of gross revenues. Leased access allows the franchise authority to set aside channel capacity for public, educational, or governmental (PEG) use. Cable operators are required to set aside 10 to 15 percent of active channels to persons unaffiliated with the cable operator. This requirement is an important public access precedent with respect to the larger telecommunications infrastructure. Leased access requirements have been successfully challenged by cable operators as an

infringement upon their First Amendment rights as publishers. And the fight continues...

**common carrier** • An organization licensed by the government to supply certain types of transport services to all users at established prices such as railroads, airlines and telephone companies. Telcos, as common carriers, cannot deny or give preference among any reasonable requests for connection, must charge just and reasonable rates, and must file public tariffs on all network service offerings. Telcos may not alter content, unlike publishers, who have far more discretionary (editorial) control. Telephone companies are now entering the information service business – similar to newspapers and publishing. This creates tension between different First Amendment laws governing particular practices of common carriers and publishers as well as a clash of special interest forces in Washington, DC between newspaper publishers and telcos.

**compressed video** • Television systems that use less bandwidth than broadcast or cable TV, often using the telephone network for transmission. Compressed video is used in business or educational settings where two-way or multiple site conversations among participants are required. The video image is of poor quality (think of space shuttle images on TV) due to "compression" to fit the smaller transmission "pipe" and the equipment is expensive. However, advances in this technology suggest price drops and better quality in the coming years as compression techniques improve and demand increases.

**cyberspace** • A term from science fiction literature gaining currency in the popular press and even being used by policy makers. The term denotes a futuristic global information and telecommunications network where distinctions between telephones, televisions and computers have dissolved. Cyberspace can be thought of as the space where a conversation exists during a telephone call. Cyberspace is also where much of your money is, as the world's finances grow increasingly electronic.

**distance learning** • Interactive, instructional or training services conducted among remote participants from distributed sites. Audio, visual, and data telecommunications devices and related systems are employed. There are many distance learning models, ranging from traditional lecture formats to remote students from a teacher at a central location, to cooperative learning arrangements involving multiple connections of small groups from various locations.

**electronic mail** • *e-mail*. The exchange of private correspondence, including graphics by electronic means, usually by the interconnection of computers, word processors or fax equipment. Electronic mail means almost

instantaneous messaging among millions of people in all walks of life, all over the world over networks that exist now. E-Mail is often included as part of a BBS system to provide a private messaging service to compliment the public forum.

**fax** • facsimile; a system for transmitting and reproducing paper documents or pictures over a telephone. The use of facsimile since the AT&T divestiture has been explosive, touching all levels of society and public demand.

**FCC** • Federal Communications Commission; a board of five members (commissioners) appointed by the President and confirmed by the Senate under the provisions of the Communications Act of 1934. The FCC has the power to regulate interstate communications. The FCC is generally in the business of further deregulating the telephone companies with the philosophy that the public interest is best served within the dynamics of a competitive marketplace. There may be cases where this philosophy fails to serve the public interest in areas traditionally underserved by the market such as educational programming.

**fiber optics** • Hair-thin glass fibers which transmit light waves capable of carrying enormous amounts of information. Fiber transmission systems are vastly superior to copper or coaxial cable. Much of the high capacity trunk lines connecting central offices in the United States are now fiber, however it will cost hundreds of billions of dollars to take fiber directly to the home. The politics of fiber are important. Japan has committed to a fiber-to-the-home campaign by 2015. In 1992, it became cheaper to replace or initially install residential copper with fiber. This means that we will have a full fiber optic network to the home in just over 30 years, but the deployment will not be equitable because it cannot be installed everywhere at once. There will be political and economic choices to be faced, many which center squarely on important First Amendment and public access issues. In an information economy, who has the best access and who does not may be key to education, jobs and survival.

**final foot** • Even more difficult to deal with than the final mile (see final mile). The final foot refers to the distance between a telephone and the brain of the person using it. The term is often used in discussing issues of public education, regulation and policy.

**final mile** • A term used when discussing barriers in the way of connecting the central office to the home, or an earth station receiving say, HBO to the home via cable TV. It is more expensive and complex to bring services to homes from many local "hubs". Imagine thousands of interconnected hubs (central office) placed in communities around the country. Now imagine those thousands of hubs, each connected to



thousands of homes where each connection may require up to a mile of copper wire. Now imagine what it would take to replace all that copper with fiber optic cable.

**gateway** • The ability of one information service to transfer you to another one. You would find the gateway transparently easy and convenient to use, to dial into many information services through one phone call. Initially you would need a personal computer to do this but soon televisions will be used this way as well – many new information services will be video, in part. Telcos are eager to become gateways and to charge for this convenience. A controversial issue is whether entering such services compromises the telco's position as a common carrier and whether it begins to make them look like a publisher. In terms of a gateway, if you really want to be "seamless" you have to make all of these other services look and feel the same way to your customer – which means you have to change the formats in the way the other services are initially presented. This can be seen by some as an exercise of editorial control over the content of information.

**GIS** • Geographic Information System. A database for images, maps and graphic representations. For example: radar images of Venus through which you could fly with a joystick. On a more practical level, GIS is becoming increasingly used as a municipal planning tool which can be used to overlay maps drawn from various information sources showing, for example, water lines overlaid with buried power lines. Satellite imagery is often incorporated in such maps to analyze agricultural usage patterns, or identify source points of pollutants.

**ISDN** • Integrated Services Digital Network. A communications service which combines voice, data, and image communications – over regular phone lines, available today, but not widely offered or priced for residential use. Imagine browsing a highly visual medical database or working at home while connected to a remote office. ISDN can be viewed as "early Cyberspace", a stepping stone to the far more powerful fiber network that the next generation will take for granted.

**local civic network** • A public access network serving a wide variety of regional or local civic requirements. Local civic networks may be operated as a city service or as a broader public/private partnership. Such systems are designed to broaden public access to governance, health care and education and provide the means for citizens to conveniently discharge their public obligations. Emerging examples include Santa Monica's Public Electronic Network (PEN), Glendale's LYNX project or the Cleveland Freenet.

**modem** • (for modulation and demodulation) A device you use to connect a personal computer to a telephone to access information services or bulletin board systems (BBS). The telephone network was originally designed for

voice. A modem translates digital information to the audible tones the voice network can work with. This is inefficient but usually the only way to transmit over the telephone voice network. It is, in fact, possible to directly connect a personal computer to the network without having to translate the digital information to tones a human being could hear. This can be done using ISDN.

**multimedia** • A term which used to refer to big, noisy projectors and "educational filmstrips" in darkened rooms. Multimedia now refers to systems which represent audio and video images in displays which unlike traditional television, can be directly manipulated by the user. Multimedia systems do not simply deliver information – they deliver experiences. Combined with computer/video games, movies or TV, these systems may have greater cultural impact and are implied with the promise of fiber optics and broadband communication.

**narrowband communication** • Usually thought of as a communications systems capable of carrying only voice or relatively slow speed computer signals. Refers to the copper-based video telephone network. Broadband (fiber optics or coaxial cable) is generally thought as the only way for audio, data and video signals to be combined. However, new capabilities brought along with a new generation of computers which control the switching of calls in the nation's phone system, give narrowband communications a new lease on life (see ISDN and compressed video).

**off-line** • Disconnected from a network as in "Taking the computer off-line for maintenance." Sometimes referred to socially, as a private conversation away from a group or committee meeting: "We can discuss this later, off-line."

**on-line** • Being actively connected to a network or computer system; usually being able interactively to exchange data, commands, information with remote systems and people. Sometimes referred to socially, as in "I'll see you on-line."

**PEG** • Public, Educational and Government (PEG) access to local cable television is provided to communities who want them by virtue of the 1984 Cable Act. Public access is an important principle which needs to apply to all telecommunications and information systems and services used by the public, which are paid for in part, by public funds and taxes or franchise fees.

**POTS** • Plain Old Telephone Service. Acronym referring to telephone voice communications. Often used in discussion critical of price increases in basic voice service, often seen as bearing the burden of paying for what appears to be costly and unnecessary network modernization. One answer to the question "Whatever happened to plain old telephone service?" is "The plain old telephone network no longer exists." POTS has also been used recently to refer to Plain Old Television Service.

**twisted pair** • The term given to the wires that connect local telephone circuits to the central office. It would cost on the order of \$400 billion to replace all such twisted pair in the U.S. with fiber optic cable. Given the deterioration of the so-called "copper plant" at the rate of 3 percent per year, and the fact that it is now cheaper to install new fiber to replace old copper, such deployment will naturally play out over the next 30 years. An important policy question is whether this deployment should be accelerated.

**universal service** • Traditionally defined as making voice telephone service easily available at affordable rates – to the point of subsidy. In the coming years, this concept could be broadened to include other telecommunications services – like cable television. Universal service might be more properly defined as making communication and information services easily available at affordable rates.

**Video Dial Tone** • A term used by the FCC to describe the transformation of a telephone network capable of switching voice calls into a new telecommunications network capable of switching video – and providing voice-based information services. The Video Dial Tone decision permitting telcos to provide services such as pay-per-view videos was proposed in November 1991 and was predicated on lifting the Modified Final Judgment (MFJ) prohibitions on information services, which was done a month earlier. The Video Dial Tone decision has incurred the wrath of the cable TV interests who are beginning to directly compete with telcos by providing telephone services.

**virtual reality** • On one level, a new way to work with computers. You peer through goggles which give you a 3-D world view (a great way to learn how to fly a plane). On another level, a new way to communicate beyond the telephone in its ability to assist conversation. (Play virtual tennis with your kid from your motel on a business trip). On yet another level, the ultimate media – combining interactive databases with video and audio technology – a multi-sensory way to create new experiences for purposes of education, entertainment and commerce. At the highest level, an art form.

**public access** • A very broad and important term covering the public's right to participate in the marketplace of ideas as provided by the Constitution. Public access means providing ramps for wheel-chair bound individuals using public places. It means the Freedom of Information Act to broaden public access to government decision making. It means public access cable TV. The principle of public access is important in addressing areas of public life traditionally underserved by the commercial market, such as education, health care and governance.

*This glossary was compiled by Richard Civile, Washington director for the Center for Civic Networking, rciville@civicnet.org.*



# Telecommunications, Information & Democracy

By Sheldon Mains

The whole telecommunications network is changing, and is changing now. This year the two largest cable operators merged with major regional telephone companies to deliver a range of interactive digital services into the home:

- Bell Atlantic and TCI established the largest media merger in history (\$33 billion);

- U.S. West and Time Warner Cable formed a partnership to lay fiber optic cable throughout their territories (\$5 billion);

- AT&T bought the largest Cellular Telephone provider;

- Live video was sent over the Internet (the world wide network of computer networks built on telephone lines);

- Sun Microsystems set up a telephone/computer/TV/conferencing/satellite link/electronic mail system for the U.S. House Subcommittee on Telecommunications;

- The independent municipal phone systems in Minnesota built their own fiber optic network for long distance and are now using it for video transmission across the state;

- A federal court ruled that the regional telephone companies can now compete with cable companies to deliver video services outside their service area.

Cable television systems, telephone systems, and computer networks will not be the same next year as they are now. In five years, they will be unrecognizable if we base our thinking on today's systems.

What will all of this do to the public's ability to express their ideas on the electronic super highway? We need to become active in the whole changing industry. We need to become involved in the debates on what the new "National Information Infrastructure" will look like. Will it have public on-ramps? Will it have parks for the public? Will it have the equivalent of public libraries?

**Where will the information superhighway take us?** One of Vice President Gore's favorite topics is the need for an Information Super Highway, officially the "National Information Infrastructure," (NII) a integrated high speed network for voice, data, and video services connecting "everyone." How it will be built is being debated now by a variety of people including members of Congress, computer company executives, telecommunications company lawyers, the Federal Communications Commission, and science fiction authors. The results of the debate will likely determine the shape of our society.

For the information super highway, some of the important questions include: Who is everyone? Who will control the content? Will it allow mass communications? Will it promote the exchange of non-commercial ideas? Who will build it?

**Who is everyone?** Is "everyone" all regions of the country, or just the big cities? One of the most information intensive industries is also one of the most dispersed industries – agriculture. A successful farmer needs to know the latest information on weather forecasts, regional and world wide commodities markets, chemical and biological science, and the economy. But is it "economical" to run a fiber optic cable to every farm?

Is "everyone" everyone in areas that are "economically feasible"? It took the telephone companies years after the suburbs got electronic switching to get it to all the neighborhoods of the center cities, they

figured the lower income residents did not make it an attractive investment. Some cable companies have limited marketing in low income areas because they are afraid of increased bill collection problems.

Is "everyone" truly everyone? Will the rapid changes we are seeing in technology result in such low per unit costs that everyone will be able to afford to pay any "information tolls" that are imposed? This argument sounds very familiar, like "nuclear energy will make electricity too cheap to meter."

**Who are the publishers? Who controls the content?** Will the superhighway be like current cable TV writ large? 500 channels, with all the channels controlled by a few large corporations? TCI (one of the largest cable operators) plans on what appears to be 99 percent entertainment and home shopping channels (with maybe a few small public parks of public access, government channels, or school channels). Will it be a system that includes amplifiers and switches designed primarily for one direction communications: from the corporation's headend to your home?

Will the superhighway be like the phone system? Where anyone can transfer information on it on a "one to one" or "one to a few" basis with no easy ability for mass communications and no chance for a community to tell their own story.

Will the superhighway be like some current large scale commercial ventures like U.S. West's Communilink or IBM's Prodigy? Will it be primarily a source of prepackaged information that can be downloaded by the individual, with limited ability to interact or store information?

Will the superhighway be like the Internet (the rapidly growing world wide computer network)? Anyone can put information into the system, anyone can get information out. Users can cast information broadly. Self selected interest groups with people on every continent discuss just about any issue. To use it you just need to be a computer junkie willing to learn the arcane commands and protocols of the net.

Will the superhighway be like the U.S. mail service? Accessible to everyone, low cost, with extremely limited content control (mainly limited to mail fraud and pornography). A system that promotes the exchange of ideas through the 4th class book rate, low cost bulk mail costs for nonprofit organizations, low mail rates for publishers, and low mail rates for "junk mail." Maybe information will indeed be "too cheap to meter."

**The Builders; The Engineers of the On and Off Ramps.** Will the National Information Infrastructure be built by AT&T, MCI, Time Warner Cable, Sprint, . . . large commercial interests? Will they be like some current systems; either one way or very limited two way communications? Will the builders want to have a vertical monopoly on both the delivery system and the content?

Will it be built by government? The same group that includes the IRS, CIA, FBI and NSA. George Orwell may have only been 15 years off in predicting Big Brother.

The U.S. Congress will guide the development? Remember the Cable Communications Act of 1992. Every commercial special interest: the big three TV networks, local TV stations, Hollywood, cable companies extracted compromises. We ended up with a bill that was out of date before it passed. It resulted in reams of pages of federal rules. The big winners seem to be the Bar.



The FCC will protect the public interest? Don't hold your breath! The same people that ruled that public access use of cable systems was not protected by the First Amendment but that local shopping channels were protected by the First Amendment?

The federal court system will protect free speech? Maybe, but by the time the final decision comes from the Supreme Court, the system could be in place. And the system design will determine the amount of freedom.

**Let's experiment!** Thomas Jefferson said something like "The states are the crucible of Democracy." There are 50 of them. Lets try some experiments. There are things to build on. Freenets, public computer networks; public access television, communities telling their own stories on cable TV; community radio, stations run by volunteers; community newspapers, local for profit or nonprofit newspapers covering individual neighborhood; Libraries.

Lets get more people using Internet. It's flawed but is still the best model. The more people experience the free exchange of ideas, the more they want. But Internet needs to be easier to use. Remember, most VCRs are still blinking 12:00. The "Gopher" information retrieval system was a good start but Internet needs to be much more user friendly. (See *gophers* – page 21).

Why not try some experiments in some states? Traditionally, the federal government has "borrowed" ideas from states. States are small enough to experiment in; to work out the details. Remember, in engineering, a distributed system (a system with many control points) is more stable than a centralized system.

**Reinventing Cable Access Centers.** In reinventing public access centers, remember that one size will not fit everyone. Look at what is needed in your community and respond to the needs. Some access centers have started broadcast community radio stations. Two are looking into providing voice mail to homeless transition shelters, a number are experimenting with connections to Internet, some provide classes on how to use Internet, some are providing more "media center" type services, some provide fee based production services to government and nonprofit clients.

The National Information Infrastructure will not be the system we need unless we act. Otherwise the golden rule (of capitalism) is in effect: "Those who have the gold make the rules."

The most important thing to remember is to "Try something!"

Sheldon Mains, [mains@lmic.state.mn.us](mailto:mains@lmic.state.mn.us), is Alliance Midwest Region Public Policy Chair and Chair of the Minneapolis Telecommunications Network: 125 SE Main Street, Mpls, MN 55414 Telephone 612/331-8575.

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### For more info:

"A Vision for Change" by R. Civile at [rciville@civicnet.org](mailto:rciville@civicnet.org) or Center for Civic Networking, Box 65272, Washington, DC 20035 Telephone 202/363/3831.

Any edition of *WIRED*, a relatively new (less than a year old) magazine based in San Francisco. Especially, Mitchell Kapor's article in the July/August 1993 edition, "Where is the Digital Highway Really Heading?", the George Gilder interview in the September/October 1993 edition, and Michael Crichton's article "The Mediasaurus," also in the September/October edition.

## Nation's Telecommunications Future Unfolds in New Jersey

*This news, reported in "Access New Jersey" in February 1993, was our first evidence of a telephone company getting into the cable business. If telcos persevere and are not subject to public access requirements, it won't be long before cable operators claim that their requirements are anti-competitive and unfair. They will have a point unless we require telcos in the video dial tone business to comply with some form of PEG access requirements.*

Alarm signals are up as New Jersey Bell Telephone petitions FCC for permission to link its new fiber optic system with companies ready to lease most of the capacity for video-to-homes. With state rate concessions to provide investment money, relying on a narrow interpretation of FCC Video Dialtone ruling, the local phone company for 97 percent of New Jerseyans wants both to install the links and find users to bring immediate profit where possible.

The second New Jersey Bell video venture is in Dover Township/Toms River, where franchised cable operator Adelphia is not the partner – the role goes to brand new FutureVision. It will lease 60 to 64 available channels, competing with Adelphia.

The FCC 1992 Video Dial Tone Rule says "local telephone company providing video dial tone does not need to obtain a cable television franchise" because the telephone company "is not providing video programming directly to subscribers." That interprets Congress' meaning to be that "transmitting" video requires participation in selection and distributing programs (which is prohibited in local phone service areas).

Both New Jersey Bell and FutureVision act as if they believe that neither company is therefore bound by the Cable Acts of the United States and New Jersey. In Dover Township they say, in effect, "We'd like to work cooperatively with you; but we're in no way bound to do so."

There are some regulators who consider franchises required wherever subscribers receive such services as we get from cable operators. Into this no man's land of disagreement comes the Clinton administration, needing to replace two FCC members (including the Director); and a new Congress. Those parties hold the key to the puzzle's unfolding.

Economic development is a prime goal of both Clinton and Florio administrations, seeking expanded telecommunications networks. The nation, however, hasn't specified who pays, who constructs, who benefits, or what kind of infrastructure.

So here's New Jersey, scene of development of new technology whose uses and profitability are question marks, whose costs are guaranteed to be those of the phone company alone until 1996, and whose availability to Everyman appears dubious.

*From "Access New Jersey" published three times yearly by the Cable Users Association of New Jersey, PO Box 621, Summit, NJ 07902-0621. Telephone (908)522-0090. Editor: Helen Naimark*



## Cable TV as Gateway to Internet

### Convergence of Cable and Telcos

At the same time, the cable industry is laying fiber optic cable at a rate of 100 miles an hour, 24 hours a day, seven days a week, 365 days a year. Many companies are moving into the voice and data transmission business, constructing telephone companies and selling services such as Internet access to business and residential customers. In September 1993, the "COOK Report in Internet -> NREN" published a special edition on the convergence of cable tv and the telcos. Some quotes and excerpts follow at right: From "COOK Report -> NREN", September 1993, Editor/Publisher: Gordon Cook, [cook@path.net](mailto:cook@path.net).

**O**n August 23, 1993 the Wall Street Journal ran a long story on cable TV and the Internet. The occasion was the announcement on the same day by PSI (a commercial Internet provider) of an agreement to offer PSI network services to Continental Cablevision customers. In any case the PSI move represents a major development in the spread of a commercialized Internet. Although final prices have not yet been established by PSI, this development should make high speed connection to the Internet available for a fraction of the previous cost.

One thing is clear. The pace of change is increasing and the stakes are very high. Not only from the positioning being done by PSI but also from AT&T's efforts to make its own deals with the cable companies. The Wall Street Journal ran a story on Friday August 27 stating that AT&T "has been holding talks with the nation's biggest cable television companies about linking their customers into one big interactive multimedia network, according to AT&T's new chief of multimedia products and services."

Comments made by telephone and cable industry leaders reveal their strategic plans:

**AT&T Ready to Rebuild its Old Network via Cable TV?** "AT&T's plans involve a comprehensive network plan from AT&T Bell Laboratories. It would tie the country's disparate cable systems into one national network of common switching and transmission functions," said Robert M. Kavner, executive vice president and chief of its Multimedia Products and Services Group.

"By demonstrating the feasibility of the national interactive service, AT&T hopes to sell the cable companies on its vision for tying everybody into one network, not unlike the way the Bell System communicates via common standards today. AT&T's involvement could occur on several levels. It could sell the cable companies switching and transmission equipment and computer video servers to offer these services. Or AT&T could become a network service partner with the cable company, handling switching and long haul transmission as well as video on demand delivery. AT&T brings another asset: network reliability, which the cable companies notoriously lack."

"As a network service partner, AT&T is proposing to the cable companies that they tap into AT&T's vast long distance network. AT&T's massive switches could take over the switching functions. Thus the cable networks could quickly turn their services into a two way interactive system from today's one-way program delivery setup."

**CableLabs President Richard Green to US Congress:** "Mr. Chairman, the cable industry is making investments in these new technologies and

services today - they are not merely pipe dreams on someone's drawing board. Moreover the cable industry's investments are privately financed with no public funding. They are relatively inexpensive and very cost efficient. Most important, the entire cable infrastructure can be upgraded to provide two way interactive multimedia services for about \$20 billion which is just a fraction of the \$400 billion required for the telephone companies to comparably rebuild their local networks.

In other words the cable industry is prepared to implement its own information infrastructure and do it without federal investment. And when it completes such a transformation, the cable industry will be a two way digital carrier ready to take on many and eventually all of the functions of the telephone network.

Significant changes in CATV architecture are under way. Systems are rapidly becoming linked, both to each other, and to the Public Switched Telephone Network (PSTN). CableLabs is working on plans to rapidly change CATV architecture.

At the mid May 1993 cable conference cable executives were taking aim. "Cable's first telephony target should be \$5 billion private line market," said Robert Annunziata, President of Teleport Communications, the competitive access provider (CAP) co-owned by four cable companies, but he said "the major money and the major marketplace is in switched services." CableLabs President Richard Green urged conference attendees to "check your guns at the door" and talk about ways of collaborating, not fighting, over past differences or future markets.

Cable's move into telecommunications "is facilitated by new technologies, but it must be driven by applications. We cannot afford to build a 'field of dreams,'" said Optical Networks Inc. President Andrew Paff. Paff said he sees future not as cable-telco war but as "a telco-telco war with cable companies as partners."

The complete 12,500 word report: "Cable or Telcos? Who Will Build and Control the National Information Infrastructure?" is available as a special report. The price for non-subscribers is \$250, and for current subscribers to the COOK Report is \$150.

*Gordon Cook is the Editor/Publisher of the COOK Report on Internet -> NREN. This was the lead article in the September 1993 issue. From September 1990 to March of 1992, he was Director of a US Congress Office of Technology Assessment of the NREN - an assessment that OTA chose not to publish. The COOK Report (published monthly) costs \$500 a year for corporations, \$175 for non profits and \$85 for individuals. Cook may be reached at 609/882-2572 and [cook@path.net](mailto:cook@path.net).*



## Home Shopping Sells Public Interest Notion

*It is always worthwhile to note the mood of the federal regulators. Daniel Weitzner is the Senior Staff Counsel at the Electronic Frontier Foundation (djw@eff.org). In late August, he posted "Home Shopping and the Public Interest", an excerpt from the dissenting opinion of FCC Commissioner Ervin Duggan:*

**A**s part of regulations implementing the 1992 Cable Act, the FCC recently had to decide whether home shopping channels were legally entitled, along with local broadcast TV stations, to be carried on cable networks. The Commission found that home shopping stations serve the "public interest" and therefore had the right to demand that local cable operators carry their broadcasts, whether cable operators want to or not. Commissioner Ervin Duggan wrote a dissent, part of which seems worthy of attention:

"I must dissent to today's action on the question of Home Shopping stations and the public interest. . . The view being pressed upon the Commission is that home shopping pitches are not commercials; that home shopping messages, instead, constitute education and entertainment.

"Today, sadly, the Commission deliberately and explicitly puts forward a minimalist definition of the public interest standard, at precisely the moment when we should be mending and refurbishing that tattered banner and lifting it high over a broadcast culture that is, to borrow Gerard Manley Hopkins' poignant phrase, 'all . . . seared with trade.' I sympathize with the difficulties my colleagues face, given the implications of this vote for the must-carry provisions of the 1992 Cable Act. I sympathize with those home shopping licensees who, as minority members, have embraced this format as an entry path into the broadcast industry; I know several of them and admire their entrepreneurial efforts. This question, nevertheless, presents deep questions of public policy and principle that, in the end, prevent me

from voting with my colleagues. My quarrel, in the end, is not with these licensees, who after all have been operating under the Commission's rules since home shopping was introduced nearly a decade ago; it is with a regulatory philosophy that seems no longer to care about quality.

"In 1929, the old Radio Commission, predecessor of today's FCC, set forth its definition of the public interest standard in words that required broadcasters to present diverse programming including "entertainment, music of both classical and lighter grades, religion, education and instruction, important public events, discussions of public questions, weather, market reports and...news." Are Congress and the Commission ready now to abandon this ideal? I hope not, and I cast my dissent in the hope that some day Congress and the Commission will find it possible to visit this question again.

"Until we do, I will think of the public interest standard as a sort of once-handsome thoroughbred so abused and neglected that it has finally broken down in the middle of the track. Perhaps we can take it back to the paddock in the hope that, with care and love, it can produce offspring to recall and renew the beauty of the original. If not, let us simply put the poor beast out of its misery once and for all."

*The Electronic Frontier Foundation provides a range of information about national policy initiatives. You can obtain these files by sending an e-mail message to [eff@eff.org](mailto:eff@eff.org). Their address is Electronic Frontier Foundation, 1001 G Street NW, Suite 950 East, Washington, DC 20001. Telephone 202/347-5400.*

*Commissioner Duggan recently resigned his FCC post, effective January 30, to become president of the Public Broadcasting Service. He assumes his PBS position February 1, 1994.*

### The Post Channel World

**B**ut to focus on the number of channels in a TV system is to miss the point of where the revolution is headed. When the information highway comes to town, channels and nightly schedules will begin to fade away and could eventually disappear. In this post channel world, more and more of what one wants to see will be delivered on demand by a local supplier (either a cable system, a phone company or a joint venture) from giant computer disks called file servers. These might store hundreds of movies, the current week's broadcast programming and all manner of video publications, catalogs, data files and interactive entertainments. Remote facilities, located in Burbank, California or Hollywood or Atlanta or anywhere, will hold additional offerings from HBO and Showtime, as well as archived hits from the past. . . Click an item on the menu, and it will appear instantly on the screen.

This is the type of system that most of the top cable companies – including TCI, Time Warner, Viacom and Cablevision – hope to build within the next year or two, at least on a demonstration

basis. Many of the regional Bell operating companies (the so-called Baby Bells) are trying to create their own interactive networks, either by themselves or in partnership with cable companies. Bell Atlantic is scheduled to begin offering video on demand to 300 homes in northern Virginia in summer 1993. U.S. West has announced plans to deploy enough fiber-optic lines and coaxial cable (the pencil thick wire used by cable systems) across 14 states to deliver "video dial tones" to 13 million households starting next year.

Once the storage and switching systems are in place, all sorts of interactive services become possible. The same switches used to send a TV show to your home can also be used to send a video from your home to any other – paving the way for video phones that will be as ubiquitous and easy to use as TV. The same system will allow anybody with a camcorder to distribute videos to the world – a development that could open the floodgates to a wave of new filmmaking talent or a deluge of truly awful home movies.

*From "The Info Highway" by Philip Elmer-Dewitt, Time Magazine, April 12, 1993.*



## Traveling Down the Super Highway

For all that information swimming through the airwaves, the crucial measurement is always bandwidth: information carrying capacity, measured, typically, in bits per second. A standard phone conversation uses on the order of 10,000 bits per second. To send a fax – a picture of a page – over that standard phone line takes a long time because there are so many more bits of data in a picture than in a page of plain text. The little television picture in one of AT&T's new Videophones starts out at about 10 million bits per second – so the information has to be compressed a thousand times before it can squeeze through an ordinary phone connection.

There is something misleading about the metaphor of an information "superhighway" to carry the ever growing volume of data across the nation. At the superhighway level, most telecommunications experts agree that there is no shortage of capacity, with high-bandwidth fiber optic cables being laid as fast as they are needed.

The entire volume of Internet traffic across the Mississippi River amounts to a single 47 megabit fiber channel – a thousandth of the total telephone-network volume. Where data reaches a choke point for most of us is in the last half-mile of the journey – from the local phone company central office to the home. There it travels over the twisted pair copper wire that has carried phone conversations for a century. An ocean of data is sloshing around out there, and most of us are trying to sip it through a very narrow straw.

*From "The Future is Here and It's Ringing" by James Gleik, New York Times, May 16, 1993.*

*"Be the Ted Turner/Rupert Murdoch of your community securing media properties in the public interest."*

## Mapping Your Community's Media Landscape

By Dirk Koning

Cyberspace, Shcmyberspace ...in your face. It's all Greek to me. Through out the editing of this issue this stuff @ times . made . us . f#@king . crazy. As you delve into this issue you will quickly realize how much you don't know. This is good. We should all say, "I don't know" more often. But as you attempt to gopher the gusto realize how easy it is to get stuck in the web or fall off the wire and miss the Internet. Our pioneering effort in community television needs to be replicated in the exploding era of community media. It ain't gonna' be easy. New machines, new languages, new users, new acronyms, old snags. When you're up to your archie in this stuff realize, like a camcorder, it is only a tool to assist people in sharing stories and information. The tools change, the mission doesn't. And the exponential shift in technology makes the sharing easier and easier. I must admit as I read this issue it makes our work with community television look like a piece of cake. It's a whole lot easier explaining pan, tilt, zoom and focus than it is to explain file transfer protocol.

One suggestion before speeding up the on ramp is to first zoom all the way out of your community and do a Media Landscape Assessment. You've got to have a map before you put the rubber on the road. Ideally you want to map horizontal land based lines and services such as the cable institutional network and access points, any fiber lines in town and access points, any Internet nodes and access points, T-1 phone lines, data network lines like distance learning points, Geographic Information Systems, Police Networks, Realty Networks, Hospitals etc. Additionally you should look at frequency based vertical mapping. Lay a spectrum chart over your community and determine what frequencies are being

**Technology has traditionally expanded faster than the regulatory environments encompassing it. We have now hit the equivalent of the "Big Bang."**

used by whom. Map local AM, FM, UHF, VHF, Educational microwave, cellular phone towers, commercial microwave routes, sky scan for satellite range field, Ham & CB groups, etc. You can accomplish this several ways. Some communities hire it out. Some form telecom committees to accomplish it, some do it through metropolitan councils or the media center. If you can establish your organization as a player in this process you can score big. Public access principles can be infused from the very beginning. Your media center can become a focal point for the activities and eventually some of the switching hardware and software for a local integrated network. Also, while mapping you may discover some open frequency that you can secure. AM radio and UHF TV have traditionally been the second telecousins to FM and VHF. But with impending digital transmission, their inferiority will disappear and with compression their value will increase. Be the Ted Turner/Rupert Murdoch of your community securing media properties in the public interest.

Once you have a map you can plot a course. See what interconnectivity can and should occur. A community should decide how and who will manage their telecommunication infrastructure. Public/Private partnerships can work. Be in on that discussion. Freenets are a great place for an access center to start. So, "Get your motors runnin', head out on the highway, lookin' for adventure, or whatever comes our way..."

*Dirk Koning is executive director of the Community Media Center, 50 Library Plaza NE, Grand Rapids, MI 49503. Telephone 616/459-4788. He also chairs the CTR Editorial Board. Compuserve 70762,541.*

## The Independent Features Interactive Media

Be sure to track down the January issue of the *The Independent* published by the Association for Independent Video and Film. The issue is divided into three sections featuring: Interactive Media, The Net and The Superhighway. Articles include, "Write on the Money" (CD-ROM developers talk multimedia), "The Art of the Internet", "Intimate Interactivity: Creating Safer-Sex Software" and "280-Million Channels and Nothing On". Watch for more exchanges between CTR and *The Independent* as we open the lines of cooperative communication. To purchase your copy of *The Independent* check a local hip bookstore or send \$5.00 (includes shipping and handling) to AIVF 625 Broadway, 9th Floor, New York, NY 10012.



## What Is the Internet?

The Internet is a "network of networks". The Internet connects over 11,000 networks, in 102 countries, that conform to the Internet Protocol (IP), a standardized way of linking computers. Data enclosed in an Internet Protocol "envelope" can pass from one Internet computer to another. The Transmission Control Protocol (TCP) allows data to be broken into chunks to maximize the efficiency of the network. The combination of TCP/IP is now a universal standard for data transmission on the Internet. Other networks that don't use TCP/IP have established "gateways" for getting mail and other data through to the Internet. Many non-Internet networks are now capable of passing and receiving information to and from the Internet. In fact, the major private U.S.-based networks, such as CompuServe, MCI Mail, and America OnLine, all have Internet "gateways".

**Historical Roots.** The Internet has historical roots all the way back to the Arpanet, the first national network developed by the Advanced Research Projects Agency of the Department of Defense. Arpanet was first deployed in the late 1960s and has been upgraded incrementally ever since. In the 1980s, the National Science Foundation (NSF) received authorization from Congress to set up a network of supercomputer research centers. Five such centers were introduced, all located on major university campuses. The network that was created to link these supercomputer sites together became NSFNet, now considered the core of the Internet. NSF contracted with the Michigan higher education network Merit, to run NSFNet, and Merit subcontracts with a nonprofit corporation called Advanced Network Services (ANS) for network services.

**Funding.** The NSF awarded funding to networking projects that distributed networking resources on college campuses – beyond the few elite researchers and institutions that had been using the Internet. This set a precedence for more equitable access to the Internet. Now nearly every four-year college and university in the United States is connected to the network, as well as over 1000 high schools. At the same time, Advance Network Service is funded as a non-profit organization by IBM and MCI, opening the door to commercialization of some Internet



components. In 1991, ANS created a for-profit subsidiary called CO+RE, Inc., to carry commercial traffic previously prohibited on the Internet.

**Internet Use.** These developments have contributed to the explosive growth of the Internet user community. Traffic on the Internet has been estimated to be expanding at the rate of 15 to 20 percent per month.

Since 1985 the number of Internet hosts has grown from several dozen sites to over 2,000, and from about 2,000 hosts to over 400,000. The user base is now roughly estimated at about ten to twelve million people in the United States, and perhaps as many as fifteen to twenty million worldwide. Users of commercial and private networks with gateways to the Internet probably add another three to five million people to the Internet-accessible population.

**Range of Services.** Innovative services offered on the Internet have also flourished. Not only does the Internet provide electronic mail (about 15 percent of traffic) and file transmission (about a third of all traffic), but now contains searchable databases, on-line access to government information, thousands of network discussion groups, downloadable software, hypertext, multi-user games (MUDS) and "virtual" domains, and even communications with the White House and some other offices of the federal government. The Internet will even start to deliver "radio" as a kind of electronic "magazine" – data sent over the Internet will be run through decompression and audio program for audio play of news, music, and talk. Internet "talk-radio" is not far away.

From *"The National Information Infrastructure: A Public Interest Opportunity"* by Gary Chapman and Marc Rotenberg in *The CPSR Newsletter*, Summer 1993.

The newsletter is published quarterly by CPSR, PO Box 717, Palo Alto, California 94301. [cpsr@cpsr.org](mailto:cpsr@cpsr.org)

Computer Professionals for Social Responsibility has a list server to archive CPSR related materials and to quickly disseminate official, short CPSR announcements. To subscribe, send mail to: [listserv@gwuvm.gwu.edu](mailto:listserv@gwuvm.gwu.edu) (Internet) or [listserv@gwuvm\(bitnet\)](mailto:listserv@gwuvm(bitnet)). Include the message "subscribe cpsr <first name> <last name>." You will get a message that confirms your subscription. If you have a problem with the list server contact Paul Hyland ([phyland@gwuvm.gwu.edu](mailto:phyland@gwuvm.gwu.edu) or [phyland@gwuvm](mailto:phyland@gwuvm)).

**What is the Internet? The Internet. An unbelievably dense global matrix of 1.7 million computers, woven together by telephone lines, undersea cables, microwave links and gigabit fiber optic pipes. Touching down in 137 countries, linking 15 million to 30 million people and growing by a million users each month, it's a super data highway that carries the freight of the information age – electronic mail, digital video and sound, computer viruses and more.**

From *"Thing: The Internet"* by John Markoff, *New York Times*, September 5, 1993.

Part 2



Navigating Cyberspace



## Rules of the Road

### Ten Commandments for Computer Ethics — from the Computer Ethics Institute

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people's computer work.
3. Thou shalt not snoop around in other people's files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness.
6. Thou shalt not use or copy software for which you have not paid.
7. Thou shalt not use other people's computer resources without authorization.
8. Thou shalt not appropriate other people's intellectual output.
9. Thou shalt think about the social consequences of the program you write.
10. Thou shalt use a computer in ways that show consideration and respect.

# Choose Your On-Line Vehicle

**Y**ou don't need more than a Ford Escort to get down the Internet portion of the Information Highway. You can perform the basic functions of computer networking with a personal computer (PC) (any kind will do), a 2400 baud modem and communications software. You may already have the computer and simply need to get your hands on a modem and software or you may be starting completely from the beginning. In any event, you'll make it down the road with the simplest, least complicated machinery — once you figure out how it operates.



**The Computer as Ford Escort:** If you don't already have the equipment and want to explore the "highway system," your best bet is to contact the computer club or BBS (computer bulletin board) at your local high school. Once you find someone willing to tool down the road with you, take this edition of CTR, dial into cyberspace and start navigating!

If you're excited enough to purchase your own vehicle, scout around for a friendly computer reseller. Let your fingers do the walking: track down the used computer exchange, university surplus outlet or corporate giving programs. Smart shoppers can get a good deal at "box houses" — if you know what you want and are prepared for less than personal service.

If all you want to do is computer networking, you can buy a second hand PC for \$100 - 200 (no kidding!). If you plan to load programs (which requires more memory) and conduct other business, you should begin with a 386 or 486 processor. These machines are quickly coming down in price to make way for the soon to be issued 586 series.

**Modems and Bits Per Second.** Modems connect personal computers to telephones. They translate digital information into audible tones the telephone network can work with. Digital information is transmitted in bits. The speed of the transmission is measured by the number of bits per second (bps) — formerly referred to as "baud". To get a sense of how much information a bit really is: 300 bits = 35

characters = 1 sentence. This sentence represents about 300 bits.

Modems operate on different transmission speeds. Hardly anyone uses 300 bps modems these days, but 2400 bps are common. 9600 bps modems, transmitting 1600 characters or nearly half a page, were once considered the speediest around, are now priced at \$100 and available to the low-budget consumer. Before you purchase your modem decide if you want it to be external or internal. If you want an internal modem, make sure your computer has the "port" necessary for proper installation.

**Ready to Communicate.** Communications software is the brain that connects your computer to the host computer. It dials the number and answers the phone, instructs the modem, interfaces with the operating system of the machine you are calling, provides an "interface" for you to talk with and prepares both machines to send and receive documents and files.

Communications software has many versions with similar features. If you have an educational or commercial account for Internet access, you should be provided with software to start up your account. If not, you can buy it commercially in shrink wrapped packages, or off the network as "shareware" which you can use for a nominal fee. Pro Com Plus, Hayes, DCA's CrossTalk are common and easy to use.

**Time = Money.** If you are an enthusiastic cyberspace navigator, you may find yourself spending two hours a day (or more!) on-line. When you add up the message units on your next phone bill and find out you were on the phone for 30 hours at \$.02/minute (\$36) you'll quickly figure out ways to economize on-line time.

Some advice:

- Navigate during off-peak telephone rate hours;
- Use on-line time to collect your messages and save the ones you want to keep to a file you can "download" later - Get a faster modem (9600bps is four times faster than a 2400 bps modem).

## Internet-in-a-Box

**I**f the Internet still sounds like Greek to you, you can take comfort that it's getting ever easier, more hassle-free than ever before. Latest in a string of developments is "Internet-in-a-Box", a product jointly developed by O'Reilly and Associates, a leading publisher of books on the subject, and Spry, Inc., creators of easy-to-use Windows Internet applications.

A suite of graphical network applications provides virtually transparent ease of use for Telnet, Gopher, WAIS, mail, news and Mosaic, as easy as point and click say its developers. "It makes accessing the Internet easy by eliminating the many barriers that currently exist to setting up and using an Internet connection," explained Spry President David Pool. "People at small and medium-size businesses and homes will now have access to the world of the Internet."

Buyers also automatically become subscribers to O'Reilly's Global Network Navigator, a free online source of information for explorers of the global Internet and its vast resources.

Internet-in-a-Box will be available in the first quarter of 1994 for PC users. A Mac version will follow.



# On-Ramps

From 'The Whole Internet'

By Ed Krol

No matter who you are, you get access to the Internet via a "Service Provider." Service providers sell several different kinds of service, each with its own advantages and disadvantages. As with buying a car, you have to decide what features you want; how much you're willing to pay; and then go comparison-shopping.

You may already have an Internet connection available to you. If you are a student at a medium to large four-year college or university, you can almost assume that your school is on the Internet, and you can probably get access as a student. Go to your computer center or computer science department and ask around. Don't give up easily - many times the only people who are aware of Internet are those people who actually use it.

To find out if your company has Internet access, ask anyone who is responsible for managing computer systems or taking care of your corporate network.

If you are not a student and your company doesn't have a connection, there is still hope for

inexpensive Internet access. Check out the public library. Some libraries offer a service called a Freenet. It is a community-based information and e-mail system which allows Internet access. Only a few libraries provide this service at the moment but the list is growing. (See sample list of "Freenets" in the Civic Networking section).

Short of setting up your own Internet node, you should now look at the Internet service providers. They are grouped into national and regional providers. National providers (Compuserve, America OnLine, GEnie, Delphi) market their services to anyone in the nation. Regional providers have staked out an area of their country and only market their services within that area.

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*A comparison of providers costs and services are listed in the accompanying chart below.*



SERVICE	MONTHLY CHARGE	ENTITLES YOU TO	IF YOU WANT MORE
<b>National</b>			
America OnLine	\$9.95	5 hrs on line	\$3.50/hr
Delphi	\$13.00	4 hrs on line \$4.00/hr	Add \$9/hr
	\$23.00	20 hrs on line \$1.80/hr	Same
CompuServe:Basic	\$8.95	60 e-mail msgs \$.05/page	
CompuServe:Extended	@ 2400 bps \$8/hr		
		or \$.13/min	
		@ 9600 bps \$16/hr	
		or \$.26/min	
GEnie	\$8.95	4 hrs on line \$3.00/hr	Add \$9.50/hr
Prodigy:	Basic \$14.95	2 hour or up to 30 messages	
		2 hours on line \$4.80/hr up to 3 hrs	
Prodigy: Plus		\$4.20/hr up to 6 hrs	
		\$3.60/hr more than 6 hrs	
<b>National Mail Services</b>			
MCI Mail	\$35/ year	Per message:	
		500 characters - \$.50	
		501 - 1000 char - add \$.10	
		1K - 10K char - add \$.10	
AT&T Mail		\$3.00 Per message:	
		0 - 1K characters - \$.50	
		up to 2K char - \$.80	
		up to 3K char - \$.95	
		more than 3K char - \$.05/1000	
<b>Regional Services</b>			
The World: #A	\$5.00	2 hours on line \$1.00/hour	Access via 617 area code
The World #B	\$20.00	20 hours on line	
The Well \$15.00	\$2/ hour	415 area code	
<i>Prices as of 9/31/93</i>			



## Signposts

What does :-) mean?

Emotion is clearly lacking in electronic communication. To communicate the nuance of a statement, it is helpful to illustrate what you mean. Emoticons are meant to be read by turning your head sideways to the left. Here are some common ones, the nose can be left out for a briefer emotional statement.

- :-) Smile
- :) Happy
- :~) Ha ha
- !-) Hee hee
- :-> Hey hey
- :( Sad
- :-( Boo hoo
- :-D Laughing
- :( Crying
- :[ Real downer
- [ ] Hugs and
- :\* kisses
- :-) Grin
- :-) Smirk
- :-( Frown
- ;-) Wink
- :-< Mad
- :- Male
- >- Female
- :-o Uh oh!
- ;-) Wink
- ,-) Wry and winking
- 8-) Wide eyed
- :-8( Condescending stare
- 8:-) Glasses on forehead
- :-X Closed Mouthed
- :-o Oh No!



# Sample On-Line Systems

For an extensive list of Public Dial-Up Internet Access Providers, send a message requesting information to **info-dell-server@netcom.com** or write directly to Peter Kaminski at **kaminski@netcom.com**. Here is a list compiled by Tom Sherman in his most helpful monograph, *Electronic Networking for Non-Profit Groups*, published by the Benton Foundation.

## America OnLine

Quantum Computer Services  
8619 Westwood Center Drive  
Vienna, VA 22182  
(800) 227-6364

## DELPHI

General Videotex Corporation  
3 Blackstone Street  
Cambridge MA 02139  
(617) 491-3342  
(800) 544-4005

## Prodigy

Prodigy Service Company  
Membership Services  
445 Hamilton Avenue  
White Plains NY 10601  
(800) 822-6922  
(914) 993-8000

## CompuServe

5000 Arlington Center Blvd.  
P.O. Box 20212  
Columbus OH 43220  
(614) 457-8600  
(800) 848-8199

## GENie

General Electric Network for  
Information Exchange  
GE Information Services  
401 North Washington Street  
Rockville MD 20850  
(800) 638-9636  
(301) 340-4000

## CONNECTS Inc.

10161 Bubb Road  
Cupertino CA 95014  
(800) 262-2638

## Specialized Electronic Mail Services

### AT&T Mail

AT&T Customer Service  
5000 Haldey Road  
S. Plainfield NJ 07080  
(800) 367-7225

### MCI Mail

Customer Service  
1111 19th St. NW

Suite 500  
Washington DC 20036  
(800) 444-6245

There are a variety of on-line systems and services used heavily by the non-profit community. Some services run on commercial systems while others are exclusively targeted to non-profit users and issues. Check to see if they provide Internet access.

## HandsNet

20195 Stevens Creek Blvd.  
Suite 120  
Cupertino, CA 95014  
(408) 257-4500

Focuses on poverty issues: resources for non-profits engaged in community development, legal services, and food and shelter provision.

## Institute for Global Communications

(EcoNet, PeaceNet, ConflictNet, HomeoNet)  
18 De Boom Street  
San Francisco, CA 94107  
(415) 442-0220

This computer system houses four networks dedicated to environmental preservation, peace and human rights. Over 8,000 users are involved in active information exchange. IGC is also a member of the Association for Progressive Communications, which provides on-line services for nonprofits in many countries.

## Together Net

The Together Foundation for Global Unity  
130 South Willard Street  
Burlington, VT 05401  
(802) 862-2030 voice  
(802) 626-4265 fax  
1-800-ECOLINE

Together Net is a project of The Together Foundation for Global Unity to foster world peace through self sustaining social change projects. The focus is environmental and social action issues. The Foundation also operates Eco-Line, a toll free number which allows users to access the data base without having a computer.

## NAPWA-Link

National Association of People with AIDS  
P.O. Box 18345  
Washington DC 20036  
(202) 429-2856

This system facilitates communication and AIDS-related information exchange among individuals and AIDS service providers.

## Networking and World Information (NWI)

PSN Corporation  
P.O. Box 9607  
Forestville CT 06010-9607  
(800) 669-4463  
(203) 249-7221

This business information system is home to several networks of national religious organizations.

## Public Forum\*NonProfit Connection

GENie  
401 North Washington Street  
Rockville MD 20850  
(800) 638-9636

A variety of nonprofit groups, staff members, and volunteers exchange ideas and views with each other and the general public. This service is one offered on GENie.

## Telecommunications Cooperative Network

Suite 1805  
505 8th Avenue  
New York NY 10018  
(212) 714-9780  
(212) 967-2047 fax

TCN's Electronic Village offers a home for a number of nonprofits, including relief organizations, foundations and public interest and religious groups. TCN also provides a wide range of other network technologies, including audiotext, teleconferencing, fax broadcasting and 800 and 900 numbers.

## The WELL

Whole Earth 'Lectronic Link  
27 Gate Five Road  
Sausalito CA 94965  
(415) 332-6106

This on line community is used by a variety of special interest groups working on non-profit and telecommunications issues.

*Special thanks to "Electronic Networking for Nonprofit Groups: A Guide to Getting Started" by Tom Sherman for the Benton Foundation Series "Strategic Communications for Nonprofits." Tom Sherman can be reached directly at [tsherman@eniac.seas.upenn.edu](mailto:tsherman@eniac.seas.upenn.edu)*

*The series of monographs can be obtained by contacting the Benton Foundation at 202/638-5770.*



## Getting the Message

Once you locate an Internet "gateway" and obtain an account, you will be given an address and a "mailbox" at your host computer. If your gateway provides "full Internet access," you will be able to send and receive messages (e-mail) and access a range of navigational tools and services, such as file transfers, gopher,archie, etc.

Let's talk first about your Internet address. Your personal Internet address locates you at a host computer. Your address includes your name and the Internet address of your host computer and takes this form: **login-name@machine-name**. A real life example would be **president@whitehouse.gov** or the less famous, **cctv@emba.uvm.edu**.

When you send a message, the address of the person you are writing and your return address are a kind of "envelope" for the message that gets it where it needs to go.

Your address breaks down like this:

the abbreviation of your name or organization,

@ (the abbreviation for "at"),

the name of the host computer,

the name of the site where it is located, and

a suffix describing the specific nature of the site. (*edu* means education, *org* means organizations, *gov* means government and *com* means corporate account).

Once you get "on-line" you will start to collect other e-mail addresses. Some people have already begun to include them on their business cards, which you will pick up as you travel through cyberspace and collect resources. If you are lucky you may run into a list of "fellow travelers" like the MediaActive list compiled by Tony Riddle, which can be obtained by writing to Riddle at **mtn@mr.net**.

**I just got on the Internet. What can I do now?** You now have access to all the resources you are authorized to use on your own Internet host, on any other Internet host on which you have an account, and on any other Internet host that offers publicly accessible information. The Internet gives you the ability to move information between these hosts via file transfers. Once you are logged into one host, you can use the Internet to open a connection to another, login, and use its services interactively (this is known as remote login or TELNETTING). In addition, you can send electronic mail to users at any Internet site and to users on many non-Internet sites that are accessible via electronic mail.

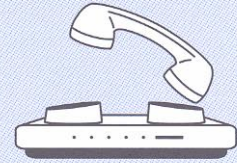
There are other services you can use. For example, some hosts provide access to specialized databases or to archives of information. *The Internet Resource Guide* provides information regarding some of these sites. The Internet Resource Guide lists facilities on the Internet that are available to you. Such facilities include supercomputer centers, library catalogs and specialized data collections. The guide is published by the NSF Network Service Center (NNSC) and is continuously updated. The Resource Guide is distributed free via e-mail (send a note to **resource-guide-request@nnsc.nsf.net** to join e-mail distribution) and via anonymous FTP (in **nnsc.nsf.net:resource-guide/\***). Hardcopy is available at a nominal fee. Call the NNSC at (617) 873-3400 for more information.

To find out if a site has a computer on the Internet consult:

"%@: A Directory of Electronic Mail Addressing and Networks" by Donnalyne Frey and Rick Adams.

"The User's Directory of Computer Networks" by Tracy LaQuey.

"The Matrix: Computer Networks and Conferencing Systems Worldwide" by John Quarterman.



## Electronic Mail

**Electronic Mail** – known as *e-mail*, is how most users get their start and is, by far, the most popular feature of the Internet. Simply put, e-mail is the capability of sending an electronic message to another person. Rather than handwrite a message to someone, you key in your message from within your e-mail program and send it to the e-mail address of your recipient. This message will travel down the phone line to the host computer where it will be routed over high-speed telephone lines and in some cases, satellite links through one or more computer networks. Once it reaches the host computer identified by your recipient's e-mail address, the message is placed in the appropriate electronic mailbox. If someone sends you a message at your e-mail address, you will receive it in your mail box and can retrieve it through your e-mail program.

Whether e-mail gets to its destination depends on whether or not the address is constructed properly. Remember that the e-mail world is bigger than the Internet. E-mail must be addressed to a person, not a machine, and personal names are often included as comments in e-mail addresses.

Example: **L-G Davitian <cctv@emba.uvm.edu>**.

If your address is located at a university or commercial "gateway", you will be provided with an e-mail program (and may possibly be able to choose from more than one). There is no definitive list. Each operating system has a number from which to choose. Nevertheless, they all have common features which will work with other e-mail systems, including:

**aliasing:** defining nick-names for people.

**folders:** saving messages in an organized way.

**forwarding:** sending your mail to another person who might be interested in the subject or to send your mail to another computer that you may read more frequently.

**inclusion of text files:** inserting a text file into an e-mail message and send it on to someone else, without using ftp

**mailing lists:** sending messages to a group of people rather than a single person.

**reply:** responding, in shorthand, to a current message, the command copies the address information from the existing message into a response that you compose and send.

There are other features such as carbon copies, attaching documents, notification of receipt and notification of reading that may be included in the e-mail program that you work with.



# What Is TELNET?

*Editor's note: The commands described here will be familiar if you operate a Unix-based computer. For those who use Macintoshes or Windows you are spared the necessity of this level of technical detail and will find the interface virtually transparent to use.*

**T**elnet is used to log into other computers on the Internet. They can be in the same room or across the country. When you are connected, you are able to operate the remote computer as if it were your own and access whatever services the remote machine makes available to its local terminals. Not only can you log in and execute commands, you can retrieve a wide variety of services from library catalogs to national newspaper articles to Supreme Court decisions.

In your travels you will be referred to information resources that are available simply by telnetting to a remote computer. Public resources do not require special login and passwords to enter the remote computer's directories. For example, you can browse through the Library of Congress by typing **telnet dra.com** at the prompt that appears once you dial into your "gateway." Almost immediately, you will be connected to the Library of Congress computer and access the card catalog as if you were in the Library itself!

Telnet also includes a list of commands available for further navigation which may be obtained by typing **telnet** (which brings up the telnet prompt), and a question mark (?) at the telnet> prompt.

If you travel outside of the local dialing area for your computer host, you can telnet from yet another computer and get into your host system. Type: **telnet remote-computer-name**. You will be asked for your login name and password. Once entered, you can proceed as if you were sitting at your very own desk terminal.

**Moving Files: FTP.** While roaming around the Internet, you'll find files that you'd like to have a copy of (rather than simply reading them on the remote system). The tool for moving the file to your own system is called **FTP**, which stands for "File Transfer Protocol." FTP allows you to move files between computers regardless of their location, operating systems or means of connection. The details of use change with each operating system, but the basic command structure is the same from machine to machine. There are two kinds of FTP that will be useful to you: anonymous FTP and transferring files between two computers on which you have accounts.

**What is anonymous FTP?** Anonymous FTP allows users who don't have a login name or a password to access public files available on a remote machine. Some sites offer anonymous FTP to distribute software and various kinds of information. For the most part, anonymous users can only copy files from a remote computer and there are limits to the files they can copy. There may be further restrictions on your use, such as the times you may access the files on the remote computer, and it is courteous common sense to observe these. You use anonymous FTP like any FTP, but the user name is "anonymous." Many systems will allow any password and request that the password you choose is your user id (or e-mail address). If this fails, the generic password is usually "guest."

For a detailed description of how to transfer files between two computers on which you have accounts, refer to page 59 in Ed Krol's *The Whole Internet User's Guide & Catalog*. We've included the example of anonymous FTP described in Kroll's book so you can see how it works:

Let's say you are browsing through the Resource Catalog, and run across a document called "Not Just Cows," a directory of useful agri-

culture oriented Internet resources. The entry for this document gave access information:

**ftp ftp.sura.net;** login: **anonymous;** **cd pub/nic;** **get agriculture.list**

This tells you to get a copy of the document via anonymous FTP from nic.sura.net. Your login name will be "anonymous" and your password will be your e-mail address. Once you are logged in, you will move to the directory of available files and chose the "nic" option. If you want to know what the commands are for gopher, type "help". If you want a listing of all the files in this directory, type **dir**. Once you identify the file that you want (in this case, **agriculture.list**) you will instruct the computer by typing the command **get <filename>**.

Your actual dialog with ftp to get this resource would look like this (your commands are listed in boldface):

```
% ftp ftp.sura.net (start up ftp to the server)
Connected to nic.sura.net (the server response follows)
220 nic.sura.net FTP server (Version 6.9 Sep 30 1992) ready.
Name (ftp.sura.net:krol):anonymous (anonymous login)
331 Guest login ok, send e-mail address as password.
Password: krol@ux1.cso.uiuc.edu (you won't see this typed in)
230 Guest login ok, access restrictions apply.
ftp> cd pub/nic (move to the directory)
250 #####WELCOME TO THE SURA NETWORK INFORMATION
CENTER #####
250-SURAnet infor@sura.net
250-8400 Baltimore Blvd. 301-982-4600 (voice)
250-College Park MD USA 20740-2498 FAX 301-982-4605
250- Many of the documents available in this ftp archive are geared
250-towards the new user of the Internet. SURAnet has provided
250-several "How To" guides for network navigation tools such as,
250-telnet, ftp and e-mail. These "How To" guides are available in
250-the directory CWD command successful.
ftp> dir (list files)
200 PORT command successful.
150 Opening ASCII mode data connection for /bin/lis.
total 4096
-rw-rw-r-- 1 mtaranto 120 1226 Jun 4 17:39 .message
-rw-rw-r-- 1 mtaranto 120 7545 Jul 15 18:30 00-README.FIRST
-rw-rw-r-- 1 root 120 216594 Jan 3 1992 Internet-Tour.txt
-rw-rw-r-- 1 mtaranto 120 85677 May 11 17:29 agricultural.list
-rw-rw-r-- 1 mtaranto 120 27840 Apr 17 14:10 archie.manual
<list edited for space>
226 Transfer complete.
1753 bytes received in 1.2 seconds
ftp> get agricultural.list (move the file)
200 PORT command successful.
150 Opening ASCII mode data connection for agricultural.list
226 Transfer complete.
local: NJC remote: agricultural.list
88383 bytes received in 2.8 seconds
ftp> quit
221 Goodbye.
```

That's all there is to it. Anonymous FTP is just like regular FTP, except that you don't need a password. You will run across a wide variety of references to information available in this manner. The "Archie" service can give you more information about what is available, and where to find it.



# Other Internet Services

The following is not meant to be comprehensive but to provide a general idea of the navigational tools available to you. Once again, we have relied upon detailed information provided in "The Whole Internet" by Ed Krol (a must purchase). Special thanks also to Gary Scott Malkin and April N. Marine who compiled this information in the Users Services Working Group. This information is available if you telnet to **nic.internic**. Your command would be **telnet nic.internic**.

One of the biggest problems with the Internet is finding what you know is out there. Anonymous FTP servers sprang up early on, giving you the ability to fetch files from repositories on the network. But the existence of these files was known by word of mouth and not always easy to find. Because so many resources are available on the Internet, a slew of index and search services have cropped up to help users. They include the following:

**Gopher** is a look up tool that lets you look through the Internet by selecting resources from menus. Gopher helps you find the right menu and keep track of the various servers and information sources. Gopher ties all these items together in a worldwide distributed menu system. Archie, certain libraries and many WAIS servers are available through gopher, as are text files and software packages.

To access the Gopher system, you need a gopher client program. This must be installed on a computer which is on the Internet. If you have a university based account it is likely that they already have a gopher server on-line. There are free gopher clients for just about any computer you might have: UNIX, Macintosh, IBM/PC, XWindows, VAX/VMS, VM/CMS and more.

You can start at two "public" gophers if you telnet to **consultant.micro.umn.edu** (the mother of all gophers) and **uxl.cso.uiuc.edu**. Use the login name "gopher". The gopher client will contact its home server and ask for its main menu. The server sends the menu and the client displays it for you. When you select one of the items on the menu, your client asks the server for more information about the item. If you decide you want to save this information for future use you will have the option of sending it to your e-mail address.

Tom Sherman (**tsherman%eniac.seas.upenn.edu@uvmvm.uvm.edu**) provides us with a list of gopher sites from Internet Services List:

**telnet consultant.micro.umn.edu**  
**telnet gopher.virginia.edu** or (login: **gwis**)  
**telnet panda.uiowa.edu**  
**telnet grits.valdosta.peachnet.edu**  
**telnet gopher.uiuc.edu**  
**telnet wsuaix.csc.wsu.edu** (Login: **wsuinfo**)  
**telnet fatty.LAW.cornell.edu**  
**telnet gopher.LAW.csuohio.edu**  
**telnet cat.ohiolink.edu**

**telnet ENVIROLINK.hss.cmu.edu** (password: **envirolink**)

**telnet arx.adp.wisc.edu** (Login: **wiscinfo**)

**telnet sunsite.unc.edu**

**telnet gopher.msu.edu**

**telnet gopher.ORA.com**

**telnet finfo.tu-graz.ac.at** (Login: **info**)

**telnet info.anu.edu.au** (**Aussie**)

**telnet nstn.ns.ca** (Login: **fred**)

**telnet tolten.puc.cl** (Chile)

**telnet gopher.denet.dk** (Denmark)

**telnet gopher.th-darmstadt.de**

**telnet ecnet.ec**

**telnet ecosys.drdr.virginia.edu**

**telnet gopher.isnet.is**

**telnet siam.mi.cnr.it** (Italy)

**telnet sunic.sunet.se** (Sweden)

**telnet gopher.chalmers.se** (Sweden)

**telnet info.brad.ac.uk** (login: **info**)

Offers: access to other gophers, documents, etc. (Login: **gopher**).

**Archie** allows the searching of indexes of what files are available on public servers on the Internet. It's the place to start if you are searching for programs, data or text files. Currently it indexes about 1200 servers and 2.1 million files. You ask it either to find filenames which contain a certain search string or suggest files whose description contains a certain word. It returns the actual filenames that meet the search criteria, and the name of the servers containing those files. Once you decide which of the files most likely meets your needs, you can easily move the file to your computer with anonymous FTP.

To use Archie, you must choose an Archie server. There are a number of servers which have the same information. The best way to pick a server is to choose one which is geographically close to you on the network. You may be fortunate enough to have an archie client installed on your host computer, if not, you will use e-mail for your queries. The following shows a list of Archie servers and suggested areas for use:

**archie.rutgers.edu** - Northeastern US

**archie.sura.net** - Southeastern US

**archie.unl.edu** - Western US

**archie.ans.net** - Sites connected to the ANS network

**archie.mcgill.ca** - Canada

**archie.au** - Australia & the Pacific Basin

**archie.funet.fi** - Europe

**archie.doc.ic.ac.uk** - United Kingdom

**Wide-Area Information Servers (WAIS)**. WAIS lets you search through Internet archives looking for articles that contain groups of words. It lets you search for information in databases located on servers. Users have access to the Bible, current weather forecasts, and documents about the

continued next page

## The Internet Society recommended reading list:

*Internetworking with TCP/IP*

- Albitz & Lui, DNS and Bind Comer

*!%@: A Directory of Electronic Mail Addressing and Networks*

- Frey & Adams

*User Services Internet Resource Guide*

- Hood

*TCP/IP Network Administration*

- Hunt

*Zen and the Art of the Internet*

- Kehoe

*The Whole Earth Internet*

- Krol

*The Internet Systems Handbook*

- Lynch & Rose

*Exploring the Internet*

- Malamud

*Internet: Getting Started*

- Malamud

*The Internet Companion*

- Parker

*The Internet Message*

- Rose

*The Simple Book*

- Rose

*Internet Resource Guide*

- NNSC

*Wired Magazine*

For an expanded reading list, see bibliography beginning on page 35.



## Alliance BBS

The National Cable Programming BBS is designed to put Alliance members and media access folks throughout the country in touch with each other. The BBS receives and posts communications from computer/modem users, who share information, documents and applications. Expect to find Alliance news, job postings, production tips, program contacts, public policy info, technical help, and views on media developments.

User need a computer with a modem and any "communications" software program. To access the BBS, connect your computer via modem to an active telephone line. Launch your program and set it for 300, 1200 or 2400 baud, 8 bits data, 1 bit stop, and no parity. Have the program dial 217/359-9118 and you're there. The bulletin board shows keyboard prompts for each option, and is organized in nested menus, so users can move in and out of each section from the main menu.

Other than long distance charges, there is no cost to users. The board is operated by Greg Smith of FBN Productions and underwritten by a grant from the Alliance's Central States Region. For a brochure on the BBS, contact the national office at 202/393-2650.

## The Network Information Center (NIC)

The NIC is a facility available to all Internet users which provides information to the community. There are three means of NIC contact: network, telephone, and mail. The network accesses are the most prevalent. Interactive access is frequently used to do queries of NIC service overviews, look up user and host names, and lists of NIC documents. It is available by using telnet **nic.ddn.mil**. Any document could be retrieved via anonymous FTP.

How do you know your machine is on the Internet? If you can use Internet FTP to retrieve fields from machines such as **nic.ddn.mil**, **ftp.uu.net**, or **ftp.psi.com**, you're on it.

Some of the commercial Internet providers support large anonymous FTP servers that collect information from many sources. These servers include **ftp.psi.com**, which is run by Performance Systems International (PSI) and **ftp.uu.net**, run by UUNET Technologies. Information available from these servers include software, Supreme Court decisions, book publisher catalogs, network maps, technical reports on protocol specifications and several TCP/IP implementations.

Internet.

Accessing WAIS is a lot like accessing Gopher. In order to use it, you need to have a computer running a WAIS client program. You can install the client program on your own workstation, or can access computer that already has the client installed and run it there. As with Gopher, there are WAIS clients for most standard operating systems and computers. And soon users can try a WAIS terminal interface if you TELNET to **quake.think.com**. Use the username "WAIS".

**Hytelnet:** Hytelnet helps you find the right library catalog. This program, which can run on the PC, Macintosh, Unix or several other operating systems, helps users find the appropriate hosts and login names for library databases. Information is built into the menus.

**World Wide Web (WWW)** is the newest information service to arrive on the Internet. The Web is based on a technology called hypertext. Hypertext is a method of presenting information where selected words in the text can be "expanded" at any time to provide other information about the word. These words are links to other documents which may be text, files, pictures, or anything.

WWW is an attempt to organize all the information on the Internet, plus whatever local information you want, as a set of hypertext documents. You traverse the network by moving from one document to another via links. To try the Web, telnet to **info.cern.ch**. This will drop you into a public access client program (or browser) that will work with a traditional terminal. Other browsers are available and if you decide to install your own (good idea if you plan to use the Web frequently) you can choose between a variety designed for your particular operating system.

Unless otherwise specified, you should try "guest" as a response to the login request and use your e-mail address at the password prompt.

**What is a mailing list?** Mailing lists are usually created to discuss specific topics. Anybody interested in that topic may usually join the list. You can simply read them or contribute by sending a mes-

sage to the address that will distribute your message to the entire list. Some lists have membership restrictions, others have message content restrictions, while others are moderated. Most large, "public" mailing lists have an additional mail address to which requests to be added or deleted may be sent.

There is a "list of lists" file available if you ftp to **ftp.nisc.sri.com** that lists most of the major mailing lists along with their primary topics. The file is available for anonymous ftp in the netinfo directory, listed as interest-groups. It can also be obtained via e-mail. Send a message to **mailserver@nisc.sri.com** with the body of the message reading "Send netinfo/interest-groups" and the file will be returned in moderate size pieces to your mailbox.

One of the most useful mailing lists for community television workers is Communit which provides current information about technology and democracy. To subscribe, simply send the message "Subscribe Me" to **communit@uvmvm.uvm.edu**. (See page 33 for information on Communit).

**What is Usenet and Netnews?** Usenet and Netnews are common names of a distributed computer bulletin board system in which some computers on the Internet participate. It is not strictly an Internet service: many computers not on the Internet also participate. Netnews can be a valuable tool to economize what might otherwise be a large volume of traffic from electronic mailing lists.

To get on Usenet you must acquire the software (available to some computers at no cost from some anonymous FTP site across the Internet) and you must find an existing Usenet site that is willing to support a connection to your computer.

### Thanks again to:

Gary Scott Malkin, FTP Software Inc., 26 Princess Street, Wakefield MA 01880, telephone 617/246-0900. e-mail: [gmalkin@ftp.com](mailto:gmalkin@ftp.com)

April Marine, SRI International, Network Information Systems Center, 333 Ravenswood Avenue EJ294, Menlo Park CA 94025, telephone 415/859-5318. e-mail: [april@nic.ddn.mil](mailto:april@nic.ddn.mil)



## Community Computer Networks

By Steve Cisler

Just as electrical systems began to transform urban and small town America a century ago, community computer networks will do so in the 1990s. The present situation is that few people are aware of the concept of community computing networks, any more than people understood much at all about electricity in 1890. Most of the attention has been paid to national research networks such as the Internet and the commercial consumer services such as CompuServe, GENie, Prodigy or business services such as MCI Mail or Dialcom. On a local level, thousands of electronic bulletin boards have been started by dedicated individual hobbyists, small business people, non-profits, corporations, federal agencies, other governments and educational institutions. What is striking about many of these ventures is that each group is relatively unaware of the activities of the other groups.

Some community networks are bulletin boards; others are based on large commercial services, and some are Unix-based systems with connections to the Internet. These latter systems provide their users with an electronic on-ramp to a myriad services all over the world, not usually available outside of government laboratories, computer firms, and academic sites. Other systems have no connectivity outside of the town or area that they serve. Many unaffiliated users and former university students become interested in community networks for the connectivity to the Internet that some systems promise to provide.

**What sorts of unique information and services are found on community networks?** The key word is local. They provide electronic mail discussion groups for local users. Local civic groups and local businesses provide information from the town or region in which the system is located. This list is not exhaustive: bus schedules, life long learning class schedules, job opportunities, city or county legislation and regulations, calendar of

events, school lunch menus, homework help lines, advice from local professionals and trades people, electronic catalogs for libraries, restaurant listings, drafts of strategic plans, tourist attractions, motor vehicle renewals, health information, index to local newspapers and reports from members of Congress who represent the area. There is a variety of activities besides electronic mail, searching databases, and reading text files. Some systems allow for real-time chat between users or interactive games or the sharing of sound and graphics files. In addition, most systems provide information of more general interest, such as world and national news, discussion groups with participants from all over the U.S. and other countries as well. Very few systems provide commercial transaction services which will be needed if files, services, and small info-nuggets are sold over these systems.

**What sorts of connections do these systems use?** Every system allows local users to connect to the host computer(s) using a personal computer or public terminal and modem, or, in some cases, a dedicated line or wide area network. Generally, each system has a bank of modems to handle multiple callers at one time at speeds of 300, 1200, 2400 9600 or more bits per second. A few systems only have a couple of phone lines, while others have broadband ethernet (nominally 10 million bits per second) connections for some users and dialup for the rest. New systems such as the San Marcos, Texas, TeleCommUNITY Network, employ fiber optic links running at 45 million bits per second between a few school and training sites and offer two-way video, audio, and data networking for the participants. The goal of this effort is to move information and not people and to involve more parts of the community than just the school systems. Many of these systems have terminals or personal computers in public places such as school classrooms, public libraries, laundromats, and government

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**C**ivic Networking is the use of advanced computer and telecommunications technologies, the "information infrastructure", for public interest information sharing and communication. Civic Networking will provide all people with the ability to independently access a wide range of information, gain a greater understanding of the issues facing society, communicate more fully with other people and with the institutions that serve them, and participate more fully in the democratic process.

Civic Networking holds the promise of improving the quality of life for all Americans. Civic Networking will insure that we do not become a society of information "haves" and "have-nots". Those who are in danger of becoming the information "have-nots" include those who are poor, uneducated, live in rural communities, or are fearful of technology.

Currently, Civic Networking is a grassroots movement fueled by visionary people in communities throughout the U.S. who are developing local programs to take advantage of the exciting opportunities presented by the emerging information infrastructure. Many of these local programs are being developed in partnership with libraries, education institutions, public broadcasting stations, and local governments. Most of these programs are seeking to establish both local information and communication services and public access to the Internet.

- From "Civic Networking and the National Information Infrastructure"

Nancy Willard, Lane on Line, September 1993,  
788 W 23d Avenue, Eugene, Oregon 97405, 503/344-9125. willard@edlane.lane.ed

Part 3

Civic Networking



offices. Some systems are experimenting with new wireless radio networks as a way of providing less expensive links between community information providers, and the field trials are encouraging.

**Who starts and runs these systems?** This is as varied as the services offered by them. Sometimes a computer enthusiast will start an electronic bulletin board (BBS) with one or two phone lines, invite other groups to disseminate their information on a dedicated part of the system, and then grow the service into a community information system. Other systems have been started by some part of a university. The Cleveland Free-Net began as an Apple II BBS under the wing of the Case Western Reserve University Medical School. Through publicity and effective fundraising efforts by Dr. Tom Grundner and others in the community, it has grown to a large distributed Unix system with dozens of dialup lines and Internet connections for those users outside of the Cleveland calling area. Other key sponsors of such systems have included hospitals, local phone companies, nonprofit institutes and specially formed non-profit corporations. In some places such as Chicago, Illinois and San Jose, California, America OnLine has teamed up with the newspaper to offer information services to the community as a new business. Much of the current activity has attracted a spectrum of local citizens from all parts of the community who think a citizen-run network sounds like a good idea, and want to make it happen.

Community networks are new beasts with few people who know how they are conceived, what to feed them, how to make them flourish and spread. There are at present three organizations that can provide some assistance for groups that don't know where to start:

**Heartland Free-Net** in Peoria, Illinois, sells several packets of information and consulting time. The **Center for Community Networking** in Cambridge, Massachusetts, works with groups planning such networks. Fees for their services are negotiable and can sometimes be included in funding requests. Tom Grundner's **National Public Telecomputing Network (NPTN)** is a non-profit with some similarities to the Public Broadcasting Service in that networks and users are solicited for support. (See story page 29).

**Where does funding come from?** In some cases, these networks can be started with available hardware and software and local technical assistance, but sources for startup funds depend on the talents of the organizing group as well as clarity of their vision for the future of their network. This has never been simple, nor is there one model that will work for every locale. Some systems are dependent on the owner/entrepreneur, the school, or the business; most depend on grants from foundations, computer firms, local businesses, and a few have funds from local government. Many government institutions are severely constrained by tax payer revolts, increasing overhead, budget cuts, and the current recession, so few organizers expect that these system will be started and supported with by taxpayers alone. There are some whose funds come from the government, and others who depend on subscribers. Most depend upon a constantly changing group of partners, corporate angels, foundations, and user fees and donations to keep going. Steady funding is a serious problem even with outwardly popular and successful system. In the online world there are a number of services that everyone admits are useful and productive, but nobody has figured an easy way to support them. Most community networks are hunting for stable support. Up to now, the users have not been willing to support these system through substantial donations or fees.

*From "Community Computer Networks," April 1993, Steve Cisler, Senior Scientist Apple Library, 10381 Bandle Drive, Cupertino, California 95014. Telephone 408/974-3258. e-mail sac@apple.com.*

## *Freenets & Communities*

# A Public Access Model for Computer Networking

By Linda Mui

**Y**ou don't have to be a computer professional to use and enjoy the Internet. Freenets are publicly accessible systems on the Internet that make services and information available to everyone. Find out why the Freenet movement is growing all the time, and how you can be part of it. Who knows...maybe you can help develop a Freenet in your community.

**The Freenet Movement.** Most people agree that the Internet is a wonderful resource. But a resource for whom?

Technology is great for those of us who can readily take advantage of it. But what does the Internet mean to people who don't work in computers? Computer professionals are really impressed by networking and all its possibilities, but why should anyone else be?

Well, one answer is in the Freenet movement that's emerged over the past few years. The Freenet is based on the idea of offering a publicly-accessible computer system that provides e-mail access, information about government and community services, newspaper feeds, library catalog access, bulletin boards, public documents, and whatever else the community finds important (and which someone volunteers to put in place). As the name says, it's all free.

Some of the information is kept on local disk, but the true model of the Freenet is to provide links to other sites — for example, if you ask for the latest weather information, the Freenet connects you to the weather server at the University of Michigan.

The first Freenet was developed at Case Western Reserve University in Cleveland by Dr. Tom Grundner. Since then, several more Freenets have popped up, primarily in the United States. Freenets are also starting to take hold in Canada, New Zealand, and Finland.

The National Public Telecomputing Network (NPTN) is a non-profit central organization that helps Freenets get started. Based on the model of PBS or NPR, the NPTN maintains a collection of resources and tools that all Freenets can use.

Freenets are fully funded both by local communities and private sponsors. This means that none of the cost of connecting is passed on to the user: all you need to use a Freenet is a way to access it. You can connect to Freenets via telnet, by dialing in via modem, or by using public-access terminals located at universities or libraries. You are usually restricted to 60 minutes per login.

(Access may be free, but it's not always easy. The dial-up lines for the more popular Freenets are constantly busy. Even if you use telnet, the Cleveland machine is frequently busy, often asking you to "Please try again later.")

**Structure of Freenets.** Most Freenets provide a "guest" account for new or occasional users (like me). If you have Internet access, just telnet to a Freenet site and you should see instructions on what login name a guest should use. (Be warned that at this writing, some Freenets don't provide guest access.)

Freenets are menu-driven systems. The main menu includes several categories, such as administration, e-mail, government, schools, library, news, etc. No two Freenets have exactly the same menu structure.

To simulate the organization of a community, menu categories are often given names of buildings you might find in a small town — the Administration Building, the Post Office, the Government Center, the



Schoolhouse, etc. You might go to the Courthouse for legal advice, or to the Hospital to get the latest medical information. For example, this is the main menu of the pioneer Cleveland Freenet:

<<< CLEVELAND FREENET DIRECTORY >>>

1. The Administration Building
2. The Post Office
3. Public Square
4. The Courthouse & Government Center
5. The Arts Building
6. Science and Technology Center
7. The Medical Arts Building
8. The Schoolhouse (Academy One)
9. The Community Center & Recreation Area
10. The Business and Industrial Park
11. The Library
12. University Circle
13. The Teleport
14. The Communications Center
15. NPTN/USA TODAY HEADLINE NEWS

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h=Help, x=Exit Free-Net, "go help"=extended help  
Your Choice ==>

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To move to a particular "area" of the town, you can browse through the menus by typing its number at the arrow prompt (==>), followed by RETURN or ENTER. You can backtrack to the previous menu using "p" at the arrow prompt. As shortcuts, Freenets provide special keywords that allow you to jump to an area without having to wade through the menus — for example, typing "go admin" might bring you to the administration building.

The Administration Building or Headquarters is where you can learn more about the Freenet itself and how to register for it. You need to register for the Freenet if you want to send or receive e-mail. In addition, some Freenets prevent unregistered users from posting to bulletin boards or from connecting to other sites via gopher. The Cleveland Freenet requires you to be 21 or older to access some services, meaning you must be registered before you can use them.

If the Freenet provides guest access, then you don't have to register just to browse through the Freenet and see what it has to offer.

**Freenet Services.** So what does a Freenet have to offer? Let's go through a few of the services.

**E-mail access.** At the "Post Office" or "Communications Center," you can send and receive mail messages from anyone on the Internet. All Freenets provide e-mail for their registered users.

**On-line library catalogs.** From a Freenet, you can connect to the catalogs of local libraries and find out which library carries a particular book you're looking for. (You can even find out if it's currently on loan.)

Some Freenets also provide a gopher link to the Library of Congress.

**Historical documents.** The U.S. Constitution and the Declaration of Independence are available on-line from many Freenets. This comes in handy during those lunchtime arguments over the wording of the 19th Amendment.

**Other important documents.** Texts of recent Supreme Court opinions are often on-line within an hour of their release, via Project Hermes.

**Statistics and more statistics.** The Buffalo Freenet has the Consumer Price Index and New York state census information. The National Capital Freenet in Ottawa provides recently-published statistics on Canadian employment and earnings, as well as statistics of less universal interest, such as "Stocks of Frozen Meat Products," and

"Process Cheese and Instant Skim Milk Powder, June 1993."

**Public documents,** such as the Federal Budget. You can try printing out a copy at home if you're a dedicated tree-hater.

**Usenet news.** Many Freenets have at least a partial Usenet feed.

**Real news.** The Cleveland Freenet has a feed from USA Today. The Ottawa Freenet has feeds from Radio Free Europe, China News Digest, and Croatia News. Local papers sometimes list community cultural and sports events, or put their letters to the editor on a bulletin board.

**Science and medical news.** The Victoria Freenet lets you connect to news from NASA. Almost all Freenets are swimming in medical information; for example, on the Victoria Freenet there's lots you can learn about living with diabetes. The Denver Freenet has information for Alzheimer's and Parkinson's disease sufferers, and the American Red Cross keeps readers of the Heartland Freenet well informed.

**Access for students.** "Academy One" is a program that enables K-12 schools to connect to the Freenet and participate in telecomputing.

**Professional advice.** Some Freenets provide bulletin boards for posting questions for doctors or lawyers. Cleveland has "ask-a-doctor" and "ask-a-lawyer" bulletin boards. The Heartland Freenet in Peoria has "Ask Mr. Science" and also an "ask-a-vet" bulletin board.

**Other advice.** Freenets also generally provide a more general discussion area, giving users the opportunity to spout off about whatever they want. The most elaborate of these is the Public Square on the Cleveland Freenet. The Public Square in Cleveland also includes "polling places," in which users can submit issues and then vote on them.

**Government contacts and information.** This is one of the most ambitious goals of the Freenet movement: to have direct access to the local, state, and federal governments. (The Ottawa Freenet takes this one step further — they have an area for use by foreign embassies. So far, France is the only participant.)

Thus far, federal involvement is pretty minimal for both American and Canadian sites, limited to listings of addresses and phone numbers for senators and representatives. But most Freenets have been very successful in getting local governments involved. Almost all Freenets have listings of office phone numbers for local officials in surrounding towns. In addition, town council meeting minutes are put on line, as well as announcements of future agendas.

The Canadian Freenets are more ambitious: the Victoria Freenet draws information from many ministries in British Columbia (often through gopher links) to get road reports, statistics, tourist information, and environmental information. The Ottawa Police take part in the Ottawa Freenet, monitoring a question-and-answer bulletin board and providing statistics about local crime.

**Social services.** To me, this is the most valuable resource of a Freenet: to provide a medium in which local social service organizations or community action groups can distribute information consistently and cheaply. Many Freenets (notably, Buffalo) have extensive lists of services for senior citizens. The Denver Freenet includes information from the Colorado Literacy Hotline, tips from the Metropolitan Denver Better Business Bureau, and notices from the Denver Dumb Friends League, a service for pet owners. The Heartland Freenet in Peoria has information on Boy Scout programs, and the Victoria Freenet has listings of adult education classes.

This is where the community spirit of Freenets comes to life. The big gap the Freenets fill is that they give you a direct way to find out what resources your town has for your particular issues. This might range from needing to know where you can get free tax advice, to just know-

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ing if there are any local Star Trek fan clubs nearby.

The best testament to the Freenet movement is that after browsing through Freenets in far-away towns, I've started to wonder when one will be started in my own area. The Freenets that are out there are still pretty scrawny; large areas turn out to be "under development," and you have to wonder how often the information is updated. But they're clearly a great resource for getting community information dispersed. I now know more about community services in Denver now than I do about Cambridge, where I live. Through a WAIS database of clubs and societies in Victoria, I've learned about six different bridge clubs in Victoria, Canada, which is six more than I know about here in Cambridge, Massachusetts.

Don't fret, though. A Freenet for your area may be in development as we speak. The NPTN gives licenses and support to groups who want to start Freenets in particular areas. Even though there may not be a Freenet in your area, you can contact the NPTN to find out if one is starting, and if so, who to contact if you want to help. GO to the server **nptn.org** for information on NPTN. If no Freenets have been started in your area and you have the time, resources, and interest, the NPTN will help you start an organizing committee and provide you with software and know-how.

I've read many articles on the data superhighway and have heard claims about how useful all this networking will someday be in our everyday lives. The Freenet is the first concrete example I've seen of how we might reap some of those promised benefits today.

*Linda Mui is a writer for O'Reilly & Associates. She lives in Cambridge, MA.*

## A Current List of NPTN Free-nets

### National Public Telecomputing Network

*Affiliates and Organizing Committees (August 23, 1993) Community Computer Systems*

**Big Sky Telegraph** - Dillon, Montana  
Modem: 406-683-7680  
Internet: 192.231.192.1  
Visitor login: bbs

**Buffalo Free-Net** - Buffalo, NY  
Modem: 716-645-6128  
Internet: freenet.buffalo.edu  
Visitor login: freeport

**Cleveland Free-Net** - Cleveland, OH  
Modem: 216-368-3888  
Internet: freenet-in-a.cwru.edu  
Visitor login: Select #2 at first menu

**Columbia Online Information Network**  
(COIN) - Columbia, MO  
Modem: 314-884-7000  
Internet: bigcat.missouri.edu  
Visitor login: guest

**Denver Free-Net** - Denver, Colorado  
Modem: 303-270-4865  
Internet: freenet.hsc.colorado.edu  
Visitor login: guest

**Heartland Free-Net** - Peoria, IL  
Modem: 309-674-1100  
Internet: heartland.bradley.edu  
Visitor login: bbguest

**Lorain County Free-Net** - Elyria, OH  
Modem: 216-366-9721  
Internet: freenet.lorain.oberlin.edu  
Visitor login: guest

**Medina County Free-Net** - Medina, OH  
Modem: 216-723-6732  
Internet: <Not receiving connections at this time>

**National Capital Free-Net** - Ottawa, Canada  
Modem: 613-780-3733  
Internet: freenet.carleton.ca  
Visitor login: guest

**Tallahassee Free-Net** - Tallahassee, FL  
Modem: 904-488-5056  
Internet: freenet.fsu.edu  
Visitor login: visitor

**Tristate Online** - Cincinnati, OH  
Modem: 513-579-1990  
Internet: cbos.uc.edu  
Visitor login sequence: cbos, visitor, 9999, <return>

**Victoria Free-Net** - Victoria, British Columbia, Canada  
Modem: 604-595-2300  
Internet: freenet.victoria.bc.ca  
Visitor login: guest

**Wellington Citynet** - Wellington, New Zealand  
Modem: +64-4-801-3060  
Internet: kosmos.wcc.govt.nz  
Visitor login: <Service not available>

**Youngstown Free-Net** - Youngstown, OH  
Modem: 216-742-3072  
Internet: yfn.ysu.edu  
Visitor login: visitor

## Gore Unveils Clinton Telecommunications Proposals

**I'm pleased to announce today that at the beginning of the year, President Clinton will present to Congress a package of legislative and administrative proposals on telecommunications. It's important in discussing the information age that we discuss not merely technology, but communications. Because from communications comes community. It is important in focusing on what's ahead in communications, to zero in not on the technology, but what we use technology for. Most people today are primarily receivers of information. We watch TV. We listen to radio. In this decade we will transmit more and more as well. We'll send and receive, not just on the telephone but across the full range of the new technologies. We'll turn from consumers to providers. In this way, this change represents a kind of empowerment. The communications revolution recognizes each individual as a source of information that adds value to our community and economy."**

*- from Vice President Al Gore's address to the National Press Club, Washington, DC, December 21, 1993.*

*The whole speech is available at Gore's Internet address, vpresident@whitehouse.gov.*



## Leaders of Community Networking

*The following excerpt from "Leaders of Community Networking" profiles three of the leaders of the community networking movement. The entire article is available (and definitely worth the read) by contacting Andrew Oram at andyo@ora.com.*

By Andrew Oram

Many Internet users see the network as a system that tries to be open, convivial, wide-ranging in thought, and conducive to building bonds among different types of people. No movement today reflects these ideas better than community networking. It consists of a broad range of organizations that encourage membership by everyone in a geographic region, or all the members of a dispersed ethnic group such as American Indians.

On rare occasions a progressive local government sets up a community network, like PEN in Santa Monica, California. But usually, networks are created by groups of ordinary citizens – or not so ordinary ones, as we shall see – in the face of incredible technical, financial, and political barriers.

While community networking places a high value on access to information, it doesn't stop with facts. At the heart of any such project is the desire to build a feeling of community. Often the project seeks to improve the opportunities for its members to talk together, share resources in new ways, or find work. And perhaps most of all, community networking seeks to get citizens more involved in governing themselves.

Leaders of the civic networking movement tell us that community networking is powerful – but fragile. Its spread requires supportive government policies, an educated public, and a feeling of commitment by people to their communities. In the United States, the decisions made for the National Information Infrastructure over the next few years may determine whether community networks remain scattered experiments or succeed in reaching millions.

### **Anne Fallis, Founder of TREC (Technology for Rural Enhancement and Communities)**

In the Black Hills of South Dakota, a bulletin board system (BBS) has become a tool for delivering social programs. Anne Fallis uses her BBS daily to help set up programs in distance learning, job training, and prevention of drug and alcohol abuse.

Fallis has raised 4.5 million dollars for her programs with an expenditure of only \$20,000 – an incredibly low expense rate of under one-half of one percent. She credits her economizing to the use of the BBS. Fallis does research through a Listserv maintained by EDUCOM, uses e-mail to communicate among constituents, and advertises her programs to the outside world by connecting to other BBS's. (You can phone into her BBS at 605-394-0468.)

Programs can also use the BBS to deliver services. For instance, with the help of the BBS, collaborative writing projects are flourishing on several Indian reservations, and a professor at M.I.T. has offered long-distance courses to students in those places.

Fallis's way of working is to start programs of value to rural communities and American Indians, then turn the programs over to the community to administer. Part of the task of getting community members involved is to get them onto the BBS. Because computers are quite

common in the schools on Indian reservations, Fallis uses the schools as a networking resource. She drives out to many communities to hook up modems and train staff (something that the commercial network providers generally won't do).

Getting an Internet connection in South Dakota is very hard unless you're a university faculty member. One of Fallis's current projects is linking a large number of state residents to the Internet. She uses a combination of SLIP connections and her BBS system for this project. She is also looking into packet radio as a possible medium.

In the big picture, Fallis's goal is access for everyone to the outside world via computer networks. To promote this goal nationally, she has founded a non-profit organization, Technology for Rural Enhancement and Communities (TREC).

### **People Using Networks Can Have an Impact on Government**

by Anne Fallis

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Computer networks are starting to make a difference. But providing access to parties with money and technical ability, without paying attention to the rest of the population, will widen the gap between socio-economic classes rather than improving governance.

To reverse this trend, everyone must have easy-interface, cheap access to world-wide information highways. Public schools, libraries, and government systems can be the foundation for this access by reallocating resources. National and local governments can perform many of their functions electronically, and save enough in time and travel to pay for electronic infrastructure.

Here are some instances of local networks at work:

Cynthia Denton's Russell Country BBS brings information about federal government actions in agriculture to Hobson, Montana, a rural town of 100 people.

Congressmen Conrad Burns utilizes Big Sky Telegraph, Montana to get timely input from his constituents.

Dakota BBS, South Dakota, provides input to state legislators and Tribal Councilmen on a nearby isolated Indian Reservation.

NativeNet solicits support throughout Canada for American Indian causes.

A Colorado Springs City Councilman credits Dave Hughes with getting him elected through on-line campaigning.

Environmental Law Alliance Worldwide has provided e-mail research support to help win a number of court victories.

Cruzio, a Santa Cruz network, is lining up congressional candidates for an online forum.

Although these examples are exciting, current facilities are not enough. Access for many can be accomplished now if public policy makers quit waiting for high-end technology or Federal solutions. One rural state reports expenditures of \$1.5 million for Internet services available only to 990 faculty members. In contrast, North Dakota and Montana operate distributive systems for their entire elementary-secondary school structure for about \$200,000 per year.

Finally, economically-deprived people have little energy to participate in governance. The same telecommunications infrastructure

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that supports government improvement can support "tecnomics" – economic activity through high technology. On-line facilitation of equal economic opportunities for all will result in a true change in governance.

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### **Dave Hughes, Founder of Old Colorado City Communications**

Dave Hughes is probably the premier technical and policy facilitator in grass-roots community networking. In 1981, he started what may be the first bulletin board system (BBS) whose goal was to empower the local public politically. Since then, Hughes has traveled around the world in an effort to bring some of the most disenfranchised and isolated communities into the electronic age.

In Hughes's home town, Colorado Springs, Colorado, all residents can get online, including truck drivers logging in from Rogers Bar. On more one occasion, Colorado Springs citizens organized by Hughes online won a changes in the procurement policy by local government. His local private bulletin board has evolved into a city-run "City Link" on which the city council communicates openly with the entire community online. Hughes is targeting the state legislature next.

Hughes's work in other communities ranges from Hawaii to Russia. He designed the decentralized Big Sky Telegraph educational network in Montana. He employs Russian engineers, linked by modem, to do technical work. To support languages that don't use ASCII characters, he uses NAPLPS (North American Presentation Level Protocol Syntax). For a project in San Luis valley – a poor, rural, Hispanic area of Colorado and New Mexico – Hughes even plans to bring support for sound and music.

In December 1992, Hughes was asked by the transition team of President-elect Clinton to submit a low-cost plan for bringing computer networks into all public schools. His suggestion was by far the cheapest, because he recommended transferring data through brief phone calls, using simple store-and-forward technologies such as UUCP, Fidonet, and FrEdMail. A large part of his suggested budget would go to training. The White House ultimately sent to Congress a request that was close to the dollar amount that Hughes projected, billions less than other projections.

## **The Electronic Public Interest Versus the Private Good**

**By Dave Hughes**

**dave@oldcolo.com**

The US Government stands at a major crossroads in its role in building the National Information Highways. There are three paths open to it.

One option is to build, with tax funds, the major networks of the National Information Infrastructure. The government and other analysts argue we can't afford that.

A second choice is to remove all obstacles to the giant communications, telephone, cable, computer, and entertainment sectors. Allow them to build the network and offer it as a mass consumer service.

A third option is to unleash and support the private sector to build the infrastructure, but to use laws and regulation to ensure that every American has free or highly price-regulated access.

I am afraid this Administration already has taken the second path, abandoning the 1934 Telecom Act's principle of universal access for voice phone service. This decision has broad implications for future interactive telecommunications services.

Unfortunately, the Administration is applying the principle if you can afford it, you can have it. This will affect historically "public"

information services like K-12 education and public libraries, where the skills of the future have traditionally been passed on to the public, at the public's expense. By letting the "marketplace" decide the degree of access, we let commercial vendors of telecom go only where they see a profitable "market"; not where there is a need. This contrasts strongly with the policy of regulated phone service to rural areas, which was also the basis for business rates subsidizing residential voice phone rates.

If the Administration continues with this trend, we will equate the private interest of some citizens and groups – either wealthy, or inside favorable markets – with the public interest, which should recognize no such distinctions. And that guarantees an Information Rich/Information Poor society resembling Europe before the Industrial Age.

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### **Frank Odasz, Director of Big Sky Telegraph**

When people want an example of how successful community networking can be, they talk about Big Sky Telegraph. Frank Odasz, an educator at Western Montana College of the University of Montana, set up Big Sky to provide educational services throughout the state.

Using small grants and the technical help of Dave Hughes, the network started operation on January 1, 1988. Now over 1000 people across Montana use its educational facilities and e-mail service. Basic service is free, with Internet e-mail costing only \$50 a year.

Big Sky offers affordable access in a rural setting because the technical base is cheap and simple. Local communities provide a small computer where people can dial in at any time. The small systems exchange files once a day with the central system at Western Montana College. The central system, in turn, performs file transfers with the rest of the world every night.

In this bulletin-board-like setup, delivery can be achieved within 24 hours without the need for expensive Internet connections (although the central system is on the Internet).

Montanans use Big Sky in many ways, including distance education (taking a course with a professor located far away), collaborative school projects, and electronic newsletters. Odasz hopes to embed the network deeply enough in public life that some people can earn their living over it.

Odasz is also on the board of the Consortium for School Networking, a grass-roots organization that helps teachers nationwide exchange curricula and other useful information.

## **Community Networks Benefit Federal Goals**

**By Frank Odasz**

**franko@bigsky.dillon.mt.us**

Community networks can benefit the government by providing the training necessary for citizens to access government information electronically. Local experts can assist the general public in access to information and services through the convenience of e-mail. Those government services most important for a given community can be tailored through customized online menus for enhanced ease of access by the public. A community network can potentially provide a single point of access for local, state and national government services, accessible with the help of friendly local online public servants.

Government CD-ROM databases can be economically mass-produced and made locally accessible on multiple community networks. Regularly available for updating, these databases could be tailored to the needs of specific communities, and could provide literally gigabits of government information at very low costs.

Community networks, even those based on simple BBS software,



can potentially offer citizens individual Internet ID's. Internet access across communities can provide global citizenship and entrepreneurial opportunities to local citizens via self-teaching online classes and e-mail access.

The government's biggest benefit from community networks will be the national tap on local innovations. But widespread grassroots innovations will be necessary for the potential of electronic delivery of government services to become reality, and for our nation to be an economic leader in the information age.

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**Tom Grundner, Director of the National Public Telecomputing Network (NPTN)**

Free-Nets represent the most widespread model for connecting the public via computer networks. At the center of this model is Dr. Tom Grundner, who started the Free-Net concept with a medical project in 1984. Grundner remains at the head of the national organization that guides the creation of new Free-Nets.

Grundner's first network project was a system that handled medical questions from the public and got responses from doctors within 24 hours. He established the project in Cleveland, Ohio at the Department of Family Medicine, Case Western Reserve University. When this project became popular and widely admired, he started a general-purpose public network. The Cleveland Free-Net currently averages over 10,000 logins a day from users eager to access its publicly available information, e-mail, and newsgroups.

Grundner started the National Public Telecomputing Network (NPTN) to actively help organizations develop Free-Nets in other cities. By the autumn of 1993 there will be some 20 Free-Nets in operation, and another 45 committees to organize new ones. Three Free-Nets are in foreign countries. While the Free-Net concept appears most frequently in cities, it has recently begun an outreach program for rural areas.

GO to the server **nptn.org** for information on NPTN.

One of the central goals of NPTN is to see how this medium can be used to bring people closer to the democratic process. Users can read documents from American political history, selected congressional

bills, and Supreme Court decisions. In 1990, Free-Nets in Ohio posted biographical information and position papers for numerous candidates. Similar services were provided nationwide for the 1992 Presidential campaigns. In the future, NPTN hopes to get the elected officials and candidates to talk to the public online, directly.

## **An NREN That Includes Everyone**

**By Tom Grundner**

**tmg@nptn.org**

James Madison perhaps said it best when he wrote: "A popular government without popular information, or the means of acquiring it, is but a prologue to a farce or a tragedy, or perhaps both. Knowledge will forever govern ignorance, and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

While Madison was a master of the print medium, he could not have envisioned the development of computerized information and communications systems. Instead it is left to each succeeding generation to examine the current technologies of their day and to use them in spreading knowledge.

At the moment, for example, we are considering the development of an NREN — a National Research and Education Network. Yet, to me, the NREN makes no sense in the absence of the parallel development of free, public access, community computer systems — systems which would be to computerized information as the free public library was to the printed word. Indeed, perhaps it is time for us to re-think Madison's words.

Perhaps what is needed is not an NREN, but an NCON — a National Community Network. This network would need enough conceptual bandwidth to include the university researchers, but also recognize that a parent seeking information on the latest flu bug is a researcher too. An NCON would think in terms of K-100, not just K-12 or K-16.

Whether we are going to enter the Information Age is no longer at issue — we are. The only question that remains is whether we are going to harness this technology to provide. . . the power which knowledge gives and to provide it with equity.

## **The Real Value of Electronic Networking**

*Evelyn Pine is the former director of Computer Professionals for Social Responsibility and manager of the renowned project, Berkeley Community Memory, whose 10-terminal public-access network aimed to make telecomputing a routine event for the inhabitants of Berkeley, California.*

**By Evelyn Pine**

**T**he real value of electronic networking to democracy is not its power to reach public officials, but its power for us to meet each other in new, intimate, and yet public ways.

Television educates us that our experience is secondary — to the news, to the opinion of pundits, to the lives of celebri-

ties. Computer networking can allow us to reaffirm the experience and expertise of those in our communities.

In many ongoing electronic communities, the status of opinion-makers shifts. Rather than a crystallized hierarchy of leaders, different people emerge as knowledgeable and worthy of respect around different issues. One person, for instance, may have long experience with local politics, while another is known to keep current with ecological issues. Electronic networking may be nurtured to yield an anarchistic, intimate culture where the status of opinion-maker changes over many situations.

However, the current members of online communities tend to be white, male, well

off, and "knowledge workers." For electronic democracy to have any meaning, we need to offer broader access to the necessary tools — literacy, technology, training, time to experiment, and an online culture that is welcoming and inclusive. Groups that already champion networking among diverse constituencies — like American Indian Telecommunications, New York City's Playing to Win, and HandsNet — can be leaders in the development of electronic democracy. We also need participatory design, where those who will use the system play a substantive role in the creation of the system.

*— from Leaders of Community Networking*



## CTR Explores Media Literacy

Media literacy is the ability to access, analyze, evaluate and produce communication in a variety of forms. In the January/February issue of CTR, co-editors Paula Manley and Robin Reidy explore the promise – and the challenges – of working toward a media literate society.

► Fred Johnson advocates for a redefinition of community access centers as media education centers.

► Jesikah Maria Ross gives examples of current media literacy practices in community access centers nationwide.

► Maurice Rucker reports on a group of teens and their campaign to counter the effects of alcohol advertising.

► Plus a "Selected Resources" section, and much more!

An important resource for educators and media practitioners. Order your copies today! Cost is \$2 each with a minimum order of 25, plus shipping and handling. Contact CTR at 15 Ionia SW, Suite 201, Grand Rapids, MI 49503-4113. Or call 616/454-6663. Fax 616/454-6698.

# The Seattle People's Internet Cooperative

*(or, how a bunch of people can share a connection to the Internet)*

By Adam Freur

**Why a cooperative?** Cheap, easy, and fast, Internet service is something a lot of people look forward to. Why isn't it available now? One answer is that big companies haven't found a way to make a lot of money at it.

That doesn't mean it can't be done though. If you want a product or service that isn't available where you are, one way to get it is to form a cooperative to provide it! A cooperative is a group of people each contributing a little bit of their time, money, and organizational skills to the group for their mutual benefit.

Cooperatives have a long and successful history in the United States; there are electric, telephone, and water cooperatives in many communities around the country. Why not an Internet cooperative?

**Other Internet Cooperatives.** In fact, most of the Internet is already owned and operated by cooperatives; NorthWestNet, BARRnet, CERFnet, and other 'regional networks' are cooperatives that serve organizations (colleges, corporations) instead of individuals. The NSFnet, the 'backbone' of the Internet, is a cooperative that serves the regional cooperatives. The organizations that these 'cooperatives' serve are huge, though – like the University of Washington, Boeing, Stanford, ITT – so they don't mind paying \$30- or \$50 thousand dollars a year for a link to the Internet. For Boeing, which has over 30,000 employees, that works out to under a dollar per employee per year! Why can't it be that way for regular people too?

It can. These 'cooperatives' were started to serve large organizations – but there is no reason we can't start a cooperative to provide service to individuals and small businesses. (This is just bandwidth-sharing, pure and simple; sorry for belaboring the point.)

There are already cooperative, person-oriented Internet providers in some places – The Little Garden in San Francisco, California, RAINet in Portland, Oregon, Hookup-net in Ontario, Canada and others. These networks provide affordable service to many people, and some have been doing so for several years! It *can* be done.

**What's involved?** A public-access data-network doesn't require much in the way of traditional construction – no stringing wires along poles or digging cable. All the wires are already there. We can rent leased lines from the telephone company, fiber optic cables from other telecom companies, or just use normal residential voice phone lines that never hang up.

A public-access data-network doesn't require much equipment either – just some boxes called 'routers' that cost about the same as mid-range PCs, and maybe some modems.

A public-access data-network *\*does\** require organization, and maintenance, and planning – it is mainly PEOPLE, not hardware!

**How much will it cost?** Leasing data lines and paying commercial Internet providers costs money, but by sharing it we can reduce the cost to where we can each afford it individually.

It's a lot easier nowadays to get a connection without many restrictions on it – one that we can distribute to other people freely. SprintLink sells service like this, and it is possible to get resellable service from other vendors or organizations. This fairly recent development makes it a great deal easier to share a connection.

A high speed (T-1) Internet feed from a commercial provider can cost almost \$3,000 per month – but if 60 people share it, the cost per person is only \$50; if 120 people share it, it is \$25 per month. And that is for near-Ethernet bandwidth to the Internet! Until recently the University of Washington, all 50,000 students and staff, used just one (1) T-1 Internet feed...! Of course there are the costs in-city to connect us together, but each group can pay the cost of a lower-cost leased line to connect to the Coop's Internet feed, and pay some of the costs associated with obtaining the feed.

**Some (very) rough estimates.** Using regular voice telephone lines it is possible to get Internet to your house or business at speeds of 14.4kbps or higher depending on the modems – all one needs is a small group of people (5-20) to share the costs for a SLIP/PPP server that can distribute the Internet to that group. The phone lines could be dialup or dedicated (24 hours per day).

Costs for this option: ballpark estimate here, with 20 people sharing a 64kbps line, one-time-only setup would be around \$200 per person with monthly charges of \$50-\$100 – not including modems for both ends or both phone line charges. That is for a dedicated, 24-hour a day connection.

Having friends, acquaintances, or other businesses in the same building who also need Internet helps a lot – it is easy and cheap to share connections, and fairly easy to hook up computers via Ethernet over (spare) regular phone wires in apartments and office buildings.

Doing that kind of installation yourself can help cut costs, and sharing the cost of the equipment needed to provide the connection helps a lot.

The costs for this option are roughly the same as the first one, except that each person doesn't have to have a phone line (since people are connecting via Ethernet in their own buildings), but instead share one higher bandwidth leased line. Note that for this method, though, the amount of instantaneous available bandwidth per person is much higher – which



means faster access, even though it costs the same as the telephone line method.

These estimates are for a coop with only 20-50 members. If we can get more than 50 members – say 50 to 100, Internet gets rapidly cheaper. With a hundred or more members, the monthly charges for Internet per person (most of the cost of the service) drop significantly. (100 members: roughly \$30/mo; 200 members, \$15 per month, even though you are buying more bandwidth from the Internet provider). At this point, most of the money we will be paying will be for point-to-point telecommunications costs inside the city.

**Other Costs.** Those are some rough money costs. The other costs are time costs – we will likely have to spend a fair amount of time discussing the whats and hows over e-mail and phone, and in person. Once we have figured out how to do it, keeping it running smoothly won't be too time consuming.

Even for a network of hundreds of machines, the amount of time spent administering it is not very much when it is compared to the total time available to the members of the cooperative network. We can either divide the work up between volunteers, or have some member-workers and pay them to do the day to day tasks (just like in a food coop).

**Why not wait for a for-profit company to do this?** There are companies that do some of this now. They just charge a lot. The costs may come down in the future. . .so if you don't need Internet now, waiting is a possibility. On the other hand if you are tired of waiting and want some say in what you are getting, when you get it, and how much it costs, a cooperative is for you. The savings over a commercial provider will more than pay you back.

And coops are flexible. We can afford to try things that for-profit companies would never try – like using new technology, or new ideas in distribution (like ethernetning apartment and office buildings of our members).

**What a network cooperative is NOT.** It's not free service – it's people helping each other, pooling resources to provide network connections for mutual benefit. This does require some time, effort, and

yes, money. (Hopefully not much though!)

- It's not a for-profit business – the idea isn't to make money, it's to provide an essential service for an appropriate cost.

- It's not a 'content provider' – or a censor. We have to keep in mind that all we want to do is move data, and what people do with the data is their own business (though when you exchange data with other networks, the data you are exchanging has to conform to their policies).

- It's not an effort to put other Internet providers out of business – they provide specialized services to their own communities, just as a coop does to its own community. For example, food coops certainly do not put wholesale distributors or supermarkets out of business.

**How do we do it?** We need to find out how many people (and businesses) are interested, and what people's needs, skills, and interests are. When we find out what we all want, and what we can afford (in terms of both money and time) we can decide the best way to get connected!

Sign up to the Seattle People's Internet Cooperative e-mail list!

If you're interested, let's discuss how to do this on an e-mail list; send me (the list maintainer) a note to the address below with your e-mail address and that you want to subscribe to the SPI-COOP list.

Please feel free to e-mail any questions or comments to the address below – Adam Feuer at [adamfast@u.washington.edu](mailto:adamfast@u.washington.edu).

## Contact Information:

*The Little Garden : [tomj@wps.com](mailto:tomj@wps.com) (Tom Jennings)*

*RAINnet: [rain-admin@rain.com](mailto:rain-admin@rain.com)*

*Santa Cruz Community Internet (scruc-net)*

*903 Pacific Ave. #203-A*

*Santa Cruz, CA 95060*

*(408) 426-6771 [temporary]*

*[matthew@echo.com](mailto:matthew@echo.com), [queue@echo.com](mailto:queue@echo.com), [garlick@echo.com](mailto:garlick@echo.com)*

## Low Cost Access to Internet in the Netherlands

**By Felipe Rodriquez**

**[felipe@hacktic.nl](mailto:felipe@hacktic.nl)**

In Holland — a country of 15 million — one organization offers low-cost Internet access to all. For about Dfl. 130 (\$65 U.S.) a year and the cost of local phone calls, anyone can get a mailbox from the Hacktic Network Foundation and use its services to exchange files and mail. The estimated number of users, both direct and through linked-up bulletin board systems (BBS's), is between 1000 and 1500.

The Hacktic Network Foundation is a non-profit, all-volunteer group of system administrators. They work together without choosing fixed roles, and describe themselves rather flamboyantly as techno-rebels. The foundation is committed to extending network use to low-income people, political activists, and ethnic minorities.

Among the organizations brought online by the Hacktic Foundation are APS (Activist Press Service), WISE, Newsdesk (a politically oriented radio station), Ultimatum (a South American oriented political group), and Janssen & Janssen (an organization

that monitors government agencies). The foundation provides free access to financially strapped organizations, and technical support to politically important projects.

The foundation tries to publicize the Internet widely. Its network is used by journalists from the NRC-Handelsblad and the Volkskrant, two major Dutch newspapers. The foundation also hopes to inspire organizations to provide Internet access to under-developed countries. Currently it is helping another group bring the Internet to the occupied Israeli territories.

Internally, the network is a hierarchically-organized system with over 100 nodes and 8 dial-in lines to the central system. It uses special packet-switching protocols over UUCP to provide several Internet services locally, such as telnet and ftp. A gopher interface makes access as simple as possible to services besides mail and news. Using a dial-up connection to a system maintained by Nlnet, Hacktic exchanges files with the rest of the world.

*Felipe Rodriquez is the system administrator for Hacktic Foundation, a non-profit all volunteer group of system administrators based in Holland. In addition to low cost Internet access, Hacktic connects 100 Internet nodes across the country and provides technical assistance to cash strapped non-profits. Hacktic is especially interested in developing countries.*



## Examples of Civic Networking in Action

Contributed by Richard Civile, Center for Civic Networking, October 1993

**T**he **National Capital Area Public Access Network** (CapAccess) in Washington, D.C. works with public school librarians across a three state area. CapAccess provides free accounts, which include Internet mail, to students. School librarians use recently published reference books that catalog Internet mailing lists to help students identify interesting topics to subscribe to. Free, public access to Internet mailing lists is a valuable opportunity for children to broaden their networks of personal acquaintances to include those far outside their schools and neighborhoods to new persons who could broaden their educational and career horizons. Free public access to Internet mail provides a means for a person to easily broaden and maintain a network of personal acquaintances beyond the parochial boundaries of school, community and close friends. This has important implications for creating opportunities for low-income and inner-city students.

In Ohio, the **Youngstown Freenet**, a public computer network which provides free access to Internet mail, a social services directory is available. Low income persons can go into a public library and sit at a terminal, using only the arrow and enter keys, requiring minimal literacy. It is possible to navigate through a directory, alphabetically organized, of many social service agencies, churches, and health and human services — and make decisions based on what is learned at the terminal. This kind of social service "gateway" helps poor people gather intelligence to make better informed choices.

In Santa Monica, there is the important case of homeless people using a public access network called "**PEN**" to organize with citizen groups to raise funds from the City to provide showers and locker space to assist in job searching during the day. Similar activities have also taken place over the Community Memory Project in Berkeley, where coin-operated public terminals were placed in neighborhood Laundromats.

The **Tulare Touch Project** in Tulare County (CA) established 31 video touch-screen kiosks to help clients apply for welfare benefits, a normally tedious, error-prone process with detailed forms. Twenty percent of those using Aid For Dependent Children (AFDC) use the touch screen system. Most

seem to like it, partly because the social workers were overloaded with clerical work and the system can speak in many languages such as Vietnamese. Grant aid was received in 6 days of the initial application, instead of 45 days, error rates were dramatically reduced and staff numbers declined. It is important however, to be able to discuss welfare as well as getting welfare checks. In a day of across-the-board cutbacks in welfare all over the United States, a system such as Tulare Touch could be viewed as a powerful cost containment opportunity. However, combining a benefits service system such as Tulare Touch with a Santa Monica PEN or Community Memory Project's ability to open discussion among the homeless and needy and their broader community might actually help create new jobs and service innovations — much more than merely cutting welfare administration costs.

At the Somerville, Massachusetts, **Community Computing Center** (SCCC), computers in general are powerful tools for helping many disadvantaged people. Adult literacy students gain confidence and facility in reading and writing English by learning word processing. Unemployed workers prepare resumes and cover letters and learn and improve keyboarding, business applications and systems skills for re-entering the job market. After-school and day care children learn how useful and fun computer applications can be. The SCCC is part of a national network of community computing centers organized by Playing to Win in New York City. The program is electronically linked through the Internet so staff from different centers can exchange information with each other and further develop skills and resources.

Telluride, Colorado is a small rural community in the Rockies. The **Telluride Infozone**, [tellinst@csn.org](mailto:tellinst@csn.org) is a pilot project for broad spectrum community development and education in rural areas using public Internet access, two-way interactive cable services and community radio for K-12 and lifelong learning, libraries, health care, government and civic services, arts and culture and economic business development. While the resort town of Telluride enjoys a tourist economy, other communities in the county's 10,000 residents are in poverty, and the Infozone seeks to create economic opportunity in the broader region.

**Linton, North Dakota** is an isolated farming community of 1,500. The local econ-

omy has been stimulated through 200 data processing jobs for a large travel agency in Philadelphia. Such employment opportunity through telecommunications is beginning to reach across the nation's remote landscapes, providing jobs, diversifying farm economies and easing the effects distance has on economic isolation. While Telluride may attract a high-tech breed of writers, stock-brokers and other well-paid telecommuting "lone eagles", the surrounding communities may begin to benefit initially through basic job opportunities that could lead to a more general revitalization, an incrementally better educated population and increasingly better employment over time.

Lane County, Oregon is undergoing a major transition in its traditional economic base, the timber industry. A civic networking initiative, **Lane On-Line** seeks to provide public telecommunication and information services to assist workers and families in transition, new business development, community development and ecosystem restoration.

**Hawaii Information Network Corporation** (Hawaii INC), is a private corporation created by the State of Hawaii to encourage and promote the development of an information industry in Hawaii, and operates Hawaii FYI, the state's electronic services gateway. Hawaii FYI is a public access gateway to the state's electronic services and video conferencing facilities on each of the islands. Hawaii FYI provides a legislative information service called ACCESS that allows any citizen in the state to obtain current legislative information, including the full text of bills and provides for participation in electronic forums with legislators and others. Hawaii INC also operates Hawaii Access, a touch screen kiosk system; ASK-2000, an operator assisted referral system, and various agency bulletin board systems.

Diamond Bar, California, a recently incorporated city in Southern California seeks to reduce government related travel by nearly 2,000 trips within two years. The **Diamond Bar City Net**, a partnership of citizen volunteers, city government, and computer industry support, will serve as a model to nearly 200 other cities in the Southern California Air Quality Management District, of how a civic network can help reduce air pollution while improving the delivery of government services. This pilot project should attract state grant funds collected from driver's license

see examples - page 34



# Scenic Road Trips & Destination Locations

**C**ommunet is a "mailing list" that deals with communications democracy and technology. You'll find many interesting items posted on the list including news about the latest legislation, innovative civic network projects, and ways to snag inexpensive equipment. It is based at the University of Vermont and moderated by Steve Cavrak who can also be reached at 802/656-1483.

To subscribe to the Communet List send a message to **listserv@uvmvm.uvm.edu**. In the body of the message write "**subscribe <first name> <last name>**" and you will receive a message indicating that you've been included on the list.

To post messages on the list send it to: **communet@uvmvm.uvm.edu** and everyone who subscribes will receive it.

**Americans Communicating Electronically (ACE)** was put together by Tom Tate at the USDA and Jock Gil at the White House in an effort to make government information more accessible to its citizens. As a result, you can download primary sources of information that would otherwise be difficult to obtain. For example, if you send a message to **nii@ace.esusda.gov**, the National Information Infrastructure proposal will appear in your mailbox. **health@ace.esusda.gov** will bring you the Administration's health care proposal and **nafta@ace.esusda.gov** will bring you the index of the North American Free Trade Agreement.

For more detailed information about ACE, send a message to **info@ace.esusda.gov**.

**White House.** If you want to leave a message for the president, post it to **president@whitehouse.gov**.

The "**Department of the People**", or United States Department of Agriculture (USDA) has eliminated the printing of most of its periodicals and invested the money into on-line information access. Through the "extension service" model which has traditionally trained and informed residents the USDA has developed substantial, accessible data bases for citizens to use. These can be obtained directly from the USDA computers or through community based civic networks such as PennPages (below).

A helpful source of information is "**Exploring Resources through Internet**" published in April 1993. You can obtain it by contacting Deborah Shaffer at the Extension Service. Her internet address is **dshaffer@esusda.gov** and her phone number is 914/446-7848.

**PENpages: Pennsylvania Public Information Network** provides timely and comprehensive information relating to the agricultural sciences, human nutrition, community development and consumer issues. PENpages contains thousands of reports, newsletters and fact sheets provided by College of Agricultural Sciences faculty from Pennsylvania, New Jersey and Iowa State University as well as USDA and Pennsylvania Department of Agriculture, Soil and Conservation Service and Dept. of Environmental Resources. A User's Guide is available from **support@psupen.psu.edu**. For remote modem access dial 804/863-4820. At the prompt, type **connect pen**, and at user name type **pnotpa**.

**Internet Talk Radio** is a news and information service about the Internet, distributed on the Internet. Internet Talk Radio is modeled on the National Public Radio and has a goal of providing in-depth technical information to the Internet community. The service is made possible with support from Sun Microsystems and O'Reilly & Associates. Carl Malamud is the brains behind this project and other efforts to send voice and video down the Internet pipeline. To subscribe to the announcement list for Internet Talk Radio send mail to **announce-request@radio.com**. For attention from a human, send mail to **questions@radio.com**.

For more information about audio formats you'll want to **ftp.cwi.nl** and look for the directory **/pub/Audio Formats2.10**.

**Videophone anyone?** Using inexpensive, easy to use video phones, audio, fax, e-mail and computer graphic telecommunications technologies, the **Electronic Cafe International** and its network affiliates (could be you) are prototyping multi-media exchanges between creative people around the world. Several days a week, ECI and it's affiliates collaborate to produce interactive events including multi-site Tele-performances, Tele-Theatre, Tele-Poetry and Tele-Dialogues. Every year, ECI hosts the Annual Around the World New Years Eve "Telebration" linking time zones around the world as they enter the New Year. There are 50 ECI affiliates around the world.

Kit Galloway and Sherrie Rabinowitz are the proprietors of the Electronic Cafe International and can be contacted at 301/828-8732 or **e.cafe@netcom.com**.

**Project Gutenberg** is a non-profit, volunteer effort to get as much literature as possible on-line. Manuscripts from Shakespeare to the CIA World Factbook to Peter Pan can be downloaded by **ftp mrcnext.cso.uiuc.edu**. Login anonymous; move to the proper directory by typing **cd etext**. Another approach: **ftp quake.think.com**. Login anonymous; **cd pub/etext**.

**Electronic Frontier Foundation (EFF)** exists to promote existing academic and personal freedoms in the new worldwide computer society. You can obtain legislative and regulatory updates, information about EFF and electronic journals and magazines, including EFFector. You can e-mail to **ftphel@eff.org** for more information or **ftp ftp.eff.org**, login as anonymous and move to directory "pub" by typing **cd pub**.

One article you might want to look for is "The WELL: Small Town on the Internet Highway" by Chris Figallo (**fig@eff.org**).

Once you have ftp'd to eff, look for **pub/EFF/papers/cyber/town-on-internet-highway**.

**Free Software Foundation (FSF)** is devoted to the creation and distribution of software free of licensing fees or restrictions. You can access this information via **ftp prep.ai.mit.edu**. Login as anonymous; Move to the correct directory by typing **cd pub/gnu**.

For information you can send a message to: **gnu@prep.ai.mit.edu**.

Part 4

Resources in Real Space



# Still More Information on the Internet

**T**he **Internet Society** is an international professional organization established to promote Internet use and distribute useful information in the form of newsletters, conferences, e-mail distribution lists. For information, e-mail to **isoc@nri.reston.va.us** or phone 703/620-8990.

**The Network Information Center (NIC).** The NIC is a facility available to all Internet users which provides information to the community. There are three means of NIC contact: network, telephone, and mail. The network accesses are the most prevalent. Interactive access is frequently used to do queries of NIC service overviews, look up user and host names, and lists of NIC documents. It is available by using **telnet nic.ddn.mil**. Any document could be retrieved via anonymous FTP.

**Zen and the Art of the Internet** is a good introduction to the subject by Brendan Kehoe. You can obtain this through **WAIS zen-internet.src** or ftp **ftp.cs.widener.edu**; login **anonymous** and **cd pub/zen**.

**Internet Mail Guide** is a detailed list of how to address electronic mail so that it will get from any network to any network - large or small. You can find out more through **ftp ftp.msstate.edu** login: **anonymous cd/pub/docs** get **internetwork-mail-guide**

If you want more information about delivery software like Gopher, WAIS and WWW dial up the **Campus Wide Information Systems Listserve Archive** by way of **WAIS bit.listserve.cwis-l.src**.

You can get a compilation of **Lists of Lists** of news and mailing lists on Bitnet and the Internet via **WAIS lists.src**.

**On-Line Resources Mailing List** is the indexed archives of the Online mailing list. Announcements and reports on various commercial and pay services available on the Internet. You can join the mailing list by sending a request to **online-request@uunet.ca** or **WAIS online@uunet.ca.src**.

If you want to know more about how to use **WAIS** to search for files: **WAIS uunet.uu.net** gets you to a server which contains current software. **WAIS wuarchive.src** routes you to the software archive maintained by Washington University. **WAIS archie-orst.src** is the WAIS-indexed version of Archie's anonymous FTP index. The Directory of WAIS Servers can be obtained through **WAIS au-directory-of-servers.src**.

**HYTELNET** is a menu-driven version of telnet. The index of all the servers it knows about. You can find library catalogs, bulletin

boards, campus information servers and other telnet sites. You can find this through **WAIS hytelnet.src**.

**What is USENET?** To find out more about this news system **ftp pit-manager** login **anonymous** and **cd pub/usenet/news.announce.newusers** get **What-is-USENET?**

To answer Frequently Asked Questions (FAQ), send e-mail to **rhys@cs.oz.au**.

The **Jargon File** is a computing jargon dictionary that forms the basis of "The New Hacker's Dictionary". Use **WAIS jargon.src**.

## HELPFUL DATABASES:

**Internet Accessible Library Catalogs and Databases** lists the several hundred online library catalogs available through the Internet. You can access this by sending a message to **list-serv@umnvma.bitnet**, the body of the message should say "get library package". If you don't want to look through the massive listing you can take a shortcut by using the University of Minnesota Gopher (**telnet consultant.micro.umn.edu**) and look for Gopher/Libraries/Library Catalogs Via Telnet.

For selected articles on electronic information technology e-mail **rtennant@library.berkeley.edu** at the University of California-Berkeley, Library.

**Gopher Jewels** is a list of gopher sites by category (subject tree). Gopher sites are placed in particular categories as a result of finding related information buried somewhere in their hole. The list is now available via anonymous ftp:

**ftp ftp.einet.net** login: **anonymous**  
**password: your e-mail address**  
**cd /pub**  
**get gopher-jewels.txt**  
**quit**

**Gopher Sites**, with the starting point at the University of Minnesota public gopher, will direct you to the mother of all gophers. You'll be able to find: **telnet consultant.micro.umn.edu** Home/ Other Gopher and Information Servers/ North America

**Canada/University of Saskatchewan** Search menu titles: use the word <freenet> and you'll get a range of files and folders on Victoria Freenets, Ottawa Free-Nets, fanco-phone gophers, lists of Free-Nets, and proceedings of the August 1993 community networking conference. You can try other Free-Net gophers here.

**USA/General/Whole Earth 'Electronic Link (WELL)** Includes in-depth information on Telluride, Colorado Info-Zone "Com-

munity Computer Networks: Building Electronic Greenbelts", a long introduction on the subject by Steve Cisler. Essays on virtual community and tending electronic communities.

## USA/General/CPSR

**cpsr/civic networks**  
Building Local Civic Nets (1992 Roundtable)  
Survey of community networks

**USA/CNN/** all the gophers in the world.

**USA/Missouri.** COIN: Columbia Online Information Network. A good working system using both Freeport software and other tools such as gopher to serve information to the public.

**USA/Virginia/Virginia Polytechnic Institute/other Virginia Tech gopher servers/Blacksburg Electronic Village**

**Pacific/ New Zealand.** Wellington City Council. Information about the City, laws and regulations, New Zealand travel information.

**Asia/Singapore/TECHNET/other gopher servers.** National Computer Board  
Singapore's IT2000 Nationwide Plan  
Vision statement  
NII strategic framework  
Taking IT2000 From Dream to Reality  
The NII Testbest  
Who's Who in IT2000

## Examples

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fees targeted at reducing government-related travel as a compliance component of the Clean Air Act.

*For More Freenet Information:*

For historical and policy papers related to freenets and other community networking: **GOPHER alfred.carleton.ca**

Andrew Patrick (**andrew@calvin.dgbt.doc.CA**) reports: Mailing list for technical information. Address your inquiry to

**Freenet-Tech@cunews.carleton.ca**

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e.g., Subscribe Freenet-Tech John Smith

Community Networking: International Freenet Conference was held August 17-19th in Ottawa Canada for more information about the workshops, ranging from

How to Start and Run a Free-Net contact Garth Graham at **aa127@Freenet.carleton.ca**. Frequently Asked Questions about the Toronto Freenet Prepared by Rick Broadhead (**ysar1111@VM1.YorkU.CA**) 416/487-5017.



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*From an ongoing compilation by Carl Kucharski, executive director of Cable Access St. Paul, 213 E. Fourth St., Studio 1, Saint Paul, MN 55101. Telephone 612/225-5153.*

## Tool That I Am

continued from page 4

plishment of the greater goals. We must not get so mesmerized as to think that technology is in and of itself interconnection. Certainly we must train, and lead and educate – but we must not bypass our goal.

It is exciting to see so many of us insiders become further turned on and connected to evolving technologies. I first became turned on and connected in the early eighties. It's good – but it's an instrument. Like all others, it can easily become an instrumentality of classism, genderism and racism.

Let's see that it doesn't. Let's connect...and make sure we truly are interconnecting.

*T. Andrew Lewis is executive director of the Alliance for Community Media, 666 11th St. NW, Suite 806, Washington, DC 20001-4542. Telephone 202/393-2650.*

## International

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U.S. At its inception and for the next 50 years, it was discussed in terms of its potential to be a communications tool. At best, it might be said that outside of the space program, only in the past decade or so has television actually been used interactively to truly communicate. And it is rather entrenched in our culture in the form of a one-way information and entertainment feeder, not as a tool for communications. In spite of the regulations governing scarce broadcast spectrum, and requiring that television programming serve the "masses," its ostensible potential to enhance each citizen's ability to participate in a democratic system of self-governance has not quite been realized as envisioned. The introduction of cable services followed very much the same path; its programming for the most part relies on the same basic principles of marketing and centrally defined programming decisions as were established by many years of broadcasting. Very few examples exist of truly interactive cable systems that are being used to recreate the culture of television as tool for communicating. Historically at least, television is a good example of the hub model.

Conversely, the telephone system practically functions in society like the matrix model. Even though telephone companies centrally switch all calls, the principles governing development of the phone systems in the U.S. were based on socially equitable access to the communications medium itself. Both government and the commercial sector cooperated from early on to insure that basic voice telephone service would be available and affordable to all segments of society. A lot of attention was paid to designing the hardware and functions for ease of use. The right to use the system is guaranteed by law, and the privacy of those using the system is protected as well.

This perspective is important in addressing how public access to communication fits in with all the current discussions and developments. In some respects, the issues are daunting. But, to reiterate a previous point, people are still and will always be the largest and most important part of any communications infrastructure, whether it's telecommunications or anything else. How the systems evolve and whether the public interest is protected will in part be determined by how invested people are in having personal access to those systems, and whether they want to use them as tools for communication or in some other capacity.

Every seemingly small way that individuals continue to exercise use of public access channels, or create exchanges of information and culture where no easy method really exists affects the general flow of the development of the entire communications infrastructure, both in the U.S. and in the rest of the world. People who operate communications services have based at least a part of their business philosophy on determining the needs of those whom they serve. So, the cumulative effect of individuals seeking "alternative" information bears out in different program services, or more customized systems for choosing services. The cumulative effect of individuals wishing to distribute "alternative" information bears out as more channel capacity or as a more narrowcasted system. Desiring to be the service provider that has what people want is no small part of money-making philosophy.

Now, recognizing how important a part of this whole infrastructure thing each person is, and also recognizing the value of sharing information and resources when working towards goals that other people are also working towards, the opportunity presented by the International Video Olympiade might appear a bit more lofty. Producers come together from many countries to discuss not only their works, but also the environment in which those works were created and distributed. Maybe it could be described as educational cross-pollination. Or something like that. As you might guess, producers around the world are working in a great variety of political landscapes, and within widely diverse cultural milieus, all of which weaves through the fabric of their work. The different context offered by an international exchange event, such as the Video Olympiade, allows each producer to explore their programs and others against a new relief, the sharper contrasts of which can make evident distinctions not apparent in a less diverse setting. Further, ideas about how to use our communications resources are shared on a level other than by the international AT&T company marketing department. All of this then, contributes to how we ultimately create a communications infrastructure that serves the ideals of free societies (and more importantly, especially around dinner time thought Alice, to edify ourselves with discussions on why the sea is boiling hot and whether pigs have wings).

*Nantz Rickard chairs the Alliance's International Committee. She is Deputy Director of DCTV, 1400 20th Street NW, Suite G-2, Washington, DC 20036. Telephone 202/659-6260, fax 202/296-8334.*



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Direct membership inquiries to Richard Turner, Ōlelo: the Corporation for Community Television, 960 Māpunapuna, 2<sup>nd</sup> floor, Honolulu, HI, 96819, or phone (808) 834-0007 ext.1714.

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